EXHIBIT B to the Declaration Of Laura W. Sawyer In Further Support Of Debtors' Motion For An Order Excluding The Testimony Of Daniel Curry And Jeffrey Hasterok

UNITED STATES BANKRUPTCY COURT

SOUTHERN DISTRICT OF NEW YORK

In Re: LEHMAN BROTHERS	)	Chapter 11 Case
	)	No. 08-13555
HOLDINGS, INC., et al.,	)	(JMP)
	)	(Jointly
Debtors.	)	Administered)
________________________	)	

DEPOSITION OF DAVID F. BABBEL

New York, New York

Friday, March 7, 2014

Reported by:
PATRICIA A. BIDONDE, RPR

March 7, 2014
10:04 a.m.

Deposition of DAVID F. BABBEL, held at the offices of JONES DAY, 222 East 41st Street, New York, New York, before Patricia A. Bidonde, a Registered Professional Reporter and Notary Public of the State of New York.

A P P E A R A N C E S:

JONES DAY
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BY: JAYANT W. TAMBE, ESQ.,
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PACIFICA LAW GROUP
Attorneys for Washington State Tobacco Settlement Authority
1191 2nd Avenue
Suite 2100
Seattle, Washington 98101
BY: PAUL J. LAWRENCE, ESQ.

ALSO PRESENT:
DEAN MELCHIOR

IT IS HEREBY STIPULATED AND AGREED, by and between the attorneys for the respective parties herein, that filing and sealing be and the same are hereby waived.

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, shall be reserved to the time of the trial.

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be sworn to and signed before any officer authorized to administer an oath, with the same force and effect as if signed and sworn to before the Court.

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P R O C E E D I N G S

D A V I D F. B A B B E L,
called as a witness, having been duly sworn by a Notary Public, was examined and testified as follows:

EXAMINATION BY
MR. LAWRENCE:

Q. Please state your full name for the record and spell your last name, please.
A. David Frederick Babbel, B-a-b-b-e-l.
Q. What is your business address?
A. 215 Wakefield Road, Bryn Mawr, Pennsylvania.
Q. We were introduced before the deposition. My name is Paul Lawrence, and I represent the Washington State Tobacco Settlement Authority.
I appreciate your time today. You understand you've been retained as an expert witness in this case, correct?
A. Correct.
Q. And it looks, from your materials, that you've testified many times

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before; is that fair?
A. Yes.
Q. So, I won't go through the basic rules.
I want to understand a little bit about your background and typically how your background relates to your opinions in this case.
A. Yes.
Q. Let's start with your, your non-academic appointments particularly with Goldman Sachs. Okay?
A. Sure.
Q. What was your role at Goldman Sachs, and if it's changed over the period of time that you were there, tell me about those changes.
A. Okay. I started off in the fixed income division in the financial strategies group. And my primary role was to do research on the valuation and hedging strategies used in fixed income securities.
I also, while there, did analysis of the riskiness of fixed income instruments

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and their derivatives.
My second year there I was the founding member of the insurance and pension department that worked closely with the fixed income division, financial strategies.
We were their major clients because the insurance and pension department represented the buy side for fixed-income securities. And they were the biggest buyer that Goldman had.
I stayed there for a year and then returned to the Wharton School. But I worked part-time there after.
Q. What was your part-time employment?
A. I worked part-time at Goldman Sachs thereafter.
Q. I'm sorry. Did you continue in the same role in the insurance and pension department or did you take on any additional role or duties in your part-time work?
A. Yes, I took on some additional duties. I worked with Goldman Sachs asset management and also the mortgage securities

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department. But it was mostly relating to pension and insurance issues.
Q. Is it correct that you've never been a trader for Goldman Sachs or any other entity?
A. That's correct.
Q. Have any of your non-academic experience related to forward purchase agreements?
A. Have they?
Q. Yes.
A. Yes. Certainly, at Goldman Sachs we did that. I don't think we did that at Frank Russell.
Q. What was your -- I'm sorry. Goldman Sachs --
A. At the World Bank we didn't do that.
Q. What was your personal involvement with respect to forward purchase agreements at Goldman Sachs?
A. Helping to value transactions coming up with valuation models that are appropriate in particular term structure of

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interest, forward rates and spot rates of interest.
I also helped create valuation models for derivatives on fixed income instruments. And I wrote research papers on those.
Q. In terms of the work you've described --
A. I left off one thing.
Q. Sure.
A. With Johnson and Higgins, which was the second largest insurance brokerage firm at the time, later acquired by Marsh Mack, I believe, I worked with the term structure of interest and, in particular, forward rates and spot rates of interest rates. In constructing for them hedges and way to price their granted investment contracts or GIC's.
Q. Can we go back now to what you described at Goldman Sachs. It sounded like you did -- did you do actual programming for how to do valuations or -- I'm just trying to get a little more depth of what your

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particular involvement -- obviously, you did research?

A. Yes.

Q. And, in addition to research, it sounded like you had some more specific involvement in valuation mechanisms; is it programming a model or giving advice on particular transactions? Can you explain that?

A. Yes, I worked out the mathematics. And, in some cases, I did programming for valuation. I also produced term structures of interest for them. I analyzed the volatility of the term structure of interest and used those models to assess the riskiness of fixed income instruments.

Q. You used the term in your testimony, also in your report, "term structure of interest." Can you explain that?

A. Yes. The term structure of interest is a term we use to describe interest rates or yields that are available on instruments of similar credit risk but of different maturities or duration.

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Q. Can you give me an example of a, of how the term structure of interest would have applied to a particular instrument?

A. Sure. If we go to the bank a block away, you can ask them for quotations on their certificates of deposit. And they will say, we have one rate for six months, another rate for one year, another rate for two years. We even have a five-year rate. And those will be different interest rates depending on how long you want to tie up the money.

Q. So what do you do with that data? How do you contribute to the understanding of that data?

A. I don't contribute to the understanding of the bank's CDs. But if you mean in general how do I contribute to the understanding of ...

Q. Well, for example, as I understand your testimony, you provided research and advice to Goldman Sachs with respect to the term structure of interest.

So for example, you would see, I don't know that Goldman Sachs dealt with bank

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CDs, probably more complicated -- but you would get this information from a bank, and then you'd obviously do some sort of research and valuation of the different term options that were available. Is that fair?

I'm just trying to understand a little bit more about what you were doing. Obviously you weren't just saying, "Here's the rates."

You were trying to do something -- not manipulate -- or provide information, point a perspective about those rates?

A. Yes. I'll try to explain better. What you see in the marketplace are prices of securities and their cousin yields. And those yields on the securities are particular to the instrument in question and cannot be used to value instruments that don't have those precise characteristics and exact replicas.

So what economists do and what market participants do is extract financial instruments the underlying forward rates and underlying spot rates of interest, which in

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turn, can be used to value anything that has cash flows occurring at different times along the maturity spectrum. And you have to have those fundamental factors to value other instruments. And I've written a lot about this subject.

The yields to maturity of one instrument cannot be used to, cannot be used directly to impute the value of another instrument unless it's a clone. Instead you have to extract the underlying forward rates and spot rates of interest. And those, in turn, can be used.

Q. If I understand you correctly, and please correct me if I'm oversimplifying or missing the point, you might look at two instruments a CD versus a treasury and look at the rates that are offered at various periods of time and determine from the respective rates what particular interest yields might be relevant between the two so you can make an investment decision about whether you want, if you wanted to invest in a series of six-month transactions or two-year transactions, which

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of the two instruments is going to be most beneficial or highest yielding over time?
MR. TAMBE: Objection to form.
You can answer.
A. I would say "no."
Q. Okay. Can you explain why "no"?
MR. TAMBE: Same objection.
A. That was a long question with a lot of parts to it. And I was hanging with you for a while, but then you lost me.
Q. Okay. Where did you hang with me?
A. We were talking about the rates of interest and spot rates and forward rates, and all of a sudden you injected CDs and treasuries into the mix and you weren't talking specifically with term rates of interest for the, just the yields on those instruments.
Q. I'm trying to understand when Goldman Sachs went to you and asked you for your research and advice, what were they getting in return?
A. Yes. So I published a lot of

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that when I was in Goldman Sachs, and it's listed in my vitae.
Q. But it's also fair for me to ask these questions. I'd prefer for you to answer rather than me read your hundred or so publications. If that's okay?
A. That's a smart approach. They were getting insight from me into term structure interest, its calculation, more efficient ways to calculate it.
There had been a number of approaches to calculate term structure of interest. All of them came up with fairly similar things. They wanted to understand which one was the most accurate and also to do research on its volatility over time.
Q. So did you determine the most accurate way to calculate the term structure of interest?
A. I, I was able to assess which one was the most usable for them.
Q. Which was what?
A. It was, it was called a Nelson-Siegel method which is for the Treasury

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securities. It was the one at the time that seemed to be the most accurate.
It ended up not mattering very much shortly thereafter because we started trading zero-coupon bonds in such volume that you could look at the term structure directly.
Q. Meaning that the market information was sufficient to determine term structure of interest?
A. Yes. The market information was always sufficient to determine it, but you have to do more interpolation sometimes than others, depending on how dense the market is. Zero-coupon bonds gave us a direct measure, the term structure of interest.
Q. Your research in this field depends upon market data. Correct?
A. Yes.
Q. And it assumes the validity of market data for the purposes of the research you're doing. Correct?
MR. TAMBE: Objection to form.
Q. All I'm trying to get at is when someone does research, you have to use data

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points. Correct?
A. That's correct.
Q. If I'm going to research statistics about baseball, I might use a batting average as one data point, or home runs, and come up with different calculations of how a player performs by manipulating available data. Correct?
A. By studying available data, yes.
Q. I don't mean for "manipulating" to be a bad word. Bill James has come up with new statistics based on existing data presented in new ways.
Do you understand that?
A. Yes.
Q. And in your world, you're using market data, correct, to do your analysis?
A. I do.
Q. And you're using market data to understand future rates. Is that fair, in part?
A. I -- I use market data to understand forward rates.
Q. And how would you distinguish

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forward rates from future rates?
A. Forward rates are today's price for locking in a new commitment.
Q. Because the market -- you're not using market data to predict future rates. You're using market data to understand the market as of a given day. Correct?
A. That's correct.
Q. And the ability to use market data to understand forward rates assumes that there's an active market that you can trade in. Correct?
MR. TAMBE: Objection to the form of the question.
Q. In other words, if you're deciding about buying T-Bills and you're deciding about the different rates that are available and the different terms and you're analyzing forward rates, you're using market data on the assumption that you can then go out and transact in T-Bills in the market. Correct?
MR. TAMBE: Same objection.
A. In both versions of your

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question, you used the word "you."
Q. I'm not talking about you, personally.
A. Somebody in the marketplace needs to be able to transact.
Q. So if there was an instrument that was no longer available in the market upon which to transact and you had data, say, from 40 years ago when there was a market for an instrument, you wouldn't have any ability to understand the current rate structure or current value of that asset. Is that fair?
A. I wouldn't say that.
Q. Would you explain how you would look at the value of that asset where there's no market transactions available and no market in which to transact on that asset?
MR. TAMBE: Objection to form.
You can answer.
A. The term structure of interest tells us the price or the value of cash flows received at various points in time. And the forward rates and the term structure of interest tell us the price of making future

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commitments either to buy or to sell.
The value of an instrument can be determined, and is determined, every day on Wall Street before the instruments actually exist. Because they have market data on securities that are traded that gives you an understanding of value for some security that you're about to issue. And that's --
Q. Go ahead. I don't want to interrupt your answer.
A. That's sufficient.
Q. How does current market data tell you what the yield on a bond issued by the Confederacy is?
MR. TAMBE: Objection to the form of the question.
A. Which confederacy?
Q. The South in the civil war.
A. At its current market data?
Q. Yeah.
A. Tell you what it's worth?
Q. Yeah.
A. You have to go to the market for that. There is a market for those bonds. I

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even have one. And you can trade them. But they're collector's items, so that's the market for them.
Q. So in order to understand the value of that asset, you would want actual market data to inform your value. Correct?
A. If it's a collector's item, you need that. Because there are no cash flows associated with the particular bond, since the Confederacy is out of operation.
Q. And what if you don't have market data? Let's say people lost interest in Confederate bonds, so there hasn't been a trade in five years.
A. Yes.
Q. How do you bring that into your valuation?
A. For Confederate bonds?
Q. It could be any. I'm just using that as a hypothetical.
A. Because they offer no payments, and they're bought strictly through collectors.
Q. Right.

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A. You have to look at the fundamental elements of the security in question. And the fundamental elements involve cash flows back and forth. Those can be valued with term structures of interest rates.
Q. Well, as you said, there's no cash flows associated with Confederate bonds at this time?
A. Not that I know of.
Q. The South will rise again?
A. Unless South Carolina is doing something I don't know about.
Q. You understand that the RFA question in this case is a contract with Lehman who went into bankruptcy and rejected the contract. Correct?
A. I understand.
Q. And so you understand that that particular contract is not going to generate any cash flows to the rejection date to TSA. Right?
A. That's my understanding.
Q. And is there some market out

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there for Lehman rejected Reserve Fund Agreements that you're aware of?
A. I'm not a market participant. You would need to ask Mr. Gruer about that.
Q. But, in order to analyze the value of that contract, you would want market information relevant to that contract. Correct?
MR. TAMBE: Objection to the form of the question.
A. I wouldn't need necessarily market information on that particular kind of security. What you're looking for is the cash flows that would go back and forth and you can value those. There are thousands of instruments that will provide that.
Q. But if an instrument is not generating a cash flow, it's value is zero unless, as you say in the Confederate, there's somebody that wants to put one on the wall for collector's purposes.
Is that fair?
MR. TAMBE: Objection to the form of the question.

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You can answer.
A. You switch from a -- the TSA RFA which was rejected to a confederacy bond. It's my understanding that the TSA retained their full $45 million, and they can invest that and earn money on that.
Whereas, in the confederacy bond they didn't get their -- I guess the confederacy retained their money, but they had it absconded by the federal government.
Q. Right. So going back to the TSA situation. What I understand you said was that the TSA got back its $45 million. Right?
A. They have it.
Q. So what you would look at is the opportunities the TSA has to invest that $45 million to understand what the value is that they retained. Correct?
A. I would say the value they retained is $45 million. That's what they have.
Q. That's what they have now?
A. Yes, what they do with it. That's their business, but they have the

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money.
Q. Right. But if you're trying to compare what they might have earned under the contract with Lehman with guaranteed rate of return over a period of time, to what the value of that $45 million is now, you would look to the investment opportunities on those $45 million TSA holds and see what they can generate from that, consistent with whatever restrictions there are on that $45 million and compare it to the guaranteed rate that Lehman was to provide.
Is that fair?
MR. TAMBE: Object to the form.
You can answer.
A. You're focusing on the value of something, of a contract that no longer exists. To a financial person, the value of $45 million is $45 million.
You can put it in pork belly futures. You can put it in treasury bonds. You can put it in stock. You can put it in Egyptian junk. It's still $45 million. That's what the value is. That's the end of

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that story.

Now, in terms of -- so that's the present value, $45 million. What TSA happens to do with that money is TSA's business.

Q. Fair enough. So as I understand it in pretty straightforward terms: The value of the $45 million of the TSA Reserve Fund Agreement to date was the $45 million that the TSA had in hand to do with what it thought best?

MR. TAMBE: Objection to the form of the question.

You can answer.

A. That's the value of the amount of the money they have now. If the contract was so-called in the money or out of the money -- if the contract was in the money, in favor of TSA, they would have lost some portion because they entered into the agreement back in 2002.

By 2009, things had changed. And so they may have had -- they may have been in the money or maybe Lehman was in the money, and that would be the only piece. In addition

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to the $45 million, that would either be added or subtracted to it, to come up with the value.

Q. Now, you could do a net present value calculation of the interest that TSA was supposed to earn from the date of rejection to the end date of the contract. Correct?

A. In that present value of the interest.

Q. Of the interest payments that were guaranteed under the contract?

A. You could calculate a present value of the interest. But a net present value, you have to pay for that. It's 45 million.

Q. Forget the word "net."

A. Okay.

Q. So you could add up the interest payments that were supposed to be paid every six months on that contract over the rejection date and reduce that to a present value. Is that more accurate?

A. Yes.

Q. And if you were doing a present

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value calculation, what would you use to discount the total payments over time to the present value?

MR. TAMBE: Which payments?

Q. The interest payments that Lehman was supposed to make over the every-six-months in the remaining twenty years of the RFA?

A. It would depend on the security of those payments.

Q. What do you mean by "the security of those payments"?

A. Well, if the Treasury, or something better than the Treasury, were offering me 4.484 percent on $45 million, that would have a value higher than if someone that couldn't print money were offering it to me.

Q. Well, Lehman was the one who was obligated to make the payment. Obviously, they're not going to make the payment. So is there a way -- so maybe I'm missing your point.

But there is a way we can calculate the number of dollars that Lehman was supposed to pay over the remaining term of

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the agreements. Correct?

A. That's correct.

Q. And if I wanted to discount that to present value, how would you do that?

A. It would depend, as I said, on who the counterparty is, who is going to make those payments.

Q. Right now, there's no counterparty who is going to make those payments?

A. That's right.

Q. So what assumption would you make in order to do present value calculation in the sum of those payments?

A. Well, I wouldn't assume the federal government is going to pay it. So you're going to have some other party -- you would look at the nonfederal government analog to that to be the fixed leg of a swap.

Q. So what would your best opinion be about what you would look to? Are you talking about LIBOR? Are we talking about some other index? Are we talking about the rate of return that TSA was actually receiving

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for a period of time? How would you figure that out?

MR. TAMBE: Object to the form.

You can answer.

A. It really depends upon the damage theory, I suppose. I wasn't retained as an expert on damages, and I haven't thought about damages.

The focus of my testimony is whether forward rates of interest are used in valuing swaps. So I don't have an opinion. It depends on the damage theory that the courts decide is appropriate in this case.

Q. Explain that to me. What about the damage theory would inform your decision on how to discount a current value?

MR. TAMBE: Objection to the form of the question.

A. Your hypothetical -- your question is looking at a series of future payments according to reports, the next 23 years or so, whatever remains of that. And you want me to come up with -- you're asking how would I come up with a present value.

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Q. Exactly.

A. It's inextricably linked to the damage theory. You want to -- you talk about one leg of a transaction and if it were replaced. But if it were replaced, it would involve a counterparty.

There are no counterparties out there for it, apparently, at least in your hypothetical. And if there are no counterparties out there available to make those payments, why aren't there?

Because there are counterparties out there. There are hundreds of counterparties out there for streams of payments.

Is it because Washington Tobacco is not a good counterparty? Did they deteriorate? Did that entire industry deteriorate?

It had nothing to do with Lehman Brothers. There's some reason that these hundred or thousand potential counterparties aren't taking that side with Washington. You're saying --

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Q. Because you're saying you can't find the counterparty?

A. Right. So that's not Lehman's fault. Now, were you in the money or out of the money when Lehman -- that contract, that's your focus. Right?

Q. Well, that's not my question. But obviously that's a focus of this litigation.

My question for you is: We know what the fixed leg payments from Lehman were supposed to be over those 23 years. Correct?

A. We do. We don't know that it was over 23 years, but --

Q. Yes --

MR. TAMBE: Let him ask his question. You're talking over each other.

Q. You do understand that it's appropriate, when looking at that number, to do a present value discount to understand what that payment stream is worth today as part of a damage calculation. Correct?

A. To the extent that damage

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calculation involves values, yes.

Q. So I'm now looking to you, Professor Babbel, to help me figure out what the appropriate mechanism to discount the present value is.

MR. TAMBE: Objection to form. Asked and answered.

You can answer.

A. I'm trying to see what I can say, what I haven't already. Because you're talking about a series of cash flows over 23 years, and the value of it obviously depends upon the counterparty. And you're saying there isn't a counterparty, and it has no value.

So, putting that aside, what's the best you can do -- the second best you can do since you have no counterparty? That is to use the market for similar sorts of cash flows, and I would use the LIBOR curve to value that.

Q. Now, in this situation, because there are no counterparties out there willing to step into the contract, does that

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complicate the valuation exercise?
MR. TAMBE: Objection to the form of the question.
A. You're stipulating that there are none because that was an assumption earlier. Now, you're stipulating?
Q. Well, Lehman's expert has testified that there was no active market in March of 2009 for these types of agreements.
A. Yes.
Q. So I don't know that that's in the form of a stipulation. But I will ask you to take that as an assumption for my question.
A. Okay.
MR. TAMBE: What's the question again?
Q. What complications does that create for valuing a contract when there's no counterparty available to step in, no market participant who's willing to enter into this contract?
A. Yes.
MR. TAMBE: Objection to the form of that question.

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A. It does not eliminate the ability to calculate a present value using LIBOR rates, which I understand would have been used when the contract was initially set up and which continued to exist in rich measure. So you can value it with LIBOR rates, as I said.
Q. In terms of the -- so we're talking about the, sort of, fixed rate of the transaction that has failed. In terms of the floating leg of the transaction, I think you testified earlier that TSA has its $45 million. Correct?
A. Yes.
Q. And it has the ability to invest that. Correct?
A. It does.
Q. And in terms of looking at what that floating leg would be worth, you would look at what the investment options are for TSA with that $45 million.
Is that fair?
A. To see what that's worth?
Q. Yes.
A. No. It's worth $45 million.

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Q. That's the present value of what TSA has?
A. Yes. They're giving that to somebody else. And if you're looking at what they could earn from it, presumably they could earn market rates. And if you discount by market rates, you got $45 million.
That's assuming that they get not only the interest on it but also the principal. If they don't get the principal, then you just calculate the interest rate you could get on it.
Q. So actually, present value is simply looking at the interest earned over time and returning now to the present. And as you said, IPOs de facto with that $45 million, it goes back to $45 million as the present value. Correct?
MR. TAMBE: Objection to the form of the question.
You can answer.
A. If you go to not only the interest stream but also the principal, yes, then it's worth 45 million.

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Q. I think we're all assuming that the principal would be there at the end.
A. Uh-huh.
Q. So we actually got off on this, talking about your nonacademic experience. I just want to finish up on that area.
You indicated you were not a trader. Did you ever participate in any way with respect to valuations of the Reserve Fund Agreement?
A. No.
Q. Did you have any involvement in any way with --
A. Well, I'm sorry, I shouldn't say that. I should say I didn't. I didn't participate in any way in the values of research fund agreements associated with tobacco settlements. As for whether I ever worked with reserve agreements apart from tobacco, I don't recall.
Q. And my next question was going to be tobacco related. If I understand your testimony, you didn't have any involvement in Tobacco-related Reserve Fund Agreements. Is

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that correct?
A. That's correct.
Q. Did you have any involvement at all in analyzing the tobacco master settlement and payments to estates in any way?
A. No.
Q. And you don't recall one way or another whether you had any involvement in other types of Reserve Fund Agreements. Is that correct?
A. That's correct.
Q. In your academic experience, did you do any writing or research with respect to Tobacco RFAs?
A. No.
Q. Did you do any writing or research with respect to the Tobacco Master Settlement Agreements and payments to the estates from that?
A. No.
Q. Do you recall doing any research and writing with respect to Reserve Fund Agreements, generally?
MR. TAMBE: Object to the form.

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You can answer.
A. To me, from a description of cash flows that respective -- it's not, Reserve Fund Agreements are different from, fundamentally different from other sorts of swap arrangements.
Q. And that's a fair answer. But, for example, you can look at your CV. You've written a lot about insurance instruments. Correct?
A. Yes.
Q. And I understand that your research and writing may pertain to Reserve Fund Agreements. But that's not my question.
My question is: Are any of your research or articles focused specifically on Reserve Fund Agreements as an instrument?
A. No. I would add that you said a lot of my writing refers to insurance instruments. But insurance instruments -- insurance companies have assets and liabilities. So I have written papers on virtually every kind of asset that an insurance company has, which is virtually

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every asset treated on Wall Street.
So to characterize those as insurance instruments, well, they're financial instruments. Insurance companies happen to buy them.
Q. And I didn't mean to distinguish that you didn't write more broadly about insurance.
A. Okay.
Q. Your -- the focus of your opinion here is on the future curve. Correct?
MR. TAMBE: Objection to the form of the question.
Q. Forward curve. Sorry.
A. Yes.
Q. And your opinion is about the fact that the forward curve is a valid tool to use in the market. Correct?
A. Yes.
Q. Are there -- and I understand that your research and publications may touch on that. But are there any particular research publications that you've listed that would talk most directly about the forward

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curve and its use in the market?
MR. TAMBE: Objection to the form of the question.
You can answer.
A. I'd have to take a look.
MR. LAWRENCE: Let's mark your report and do that.
(Babbel Exhibit 1, Report of David F. Babbel, marked for identification, as of this date.)
A. Can I mark on this? Does that make it easier?
Q. If I give you the okay to mark on it, it's okay to mark on it.
For now, let me first of all ask: Is that your expert report in this matter?
A. It looks like it, yes.
Q. So starting on page 22. You have many pages of research papers that you've conducted. And as much as I would love to read all of them, I'm asking you if you can identify -- and maybe the answer to that -- there are none that are particularly focused on the forward curve. But if you could

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identify a couple that you think are particularly focused on your view of the forward curve, that would be appreciated.
MR. TAMBE: Objection to the form of the question.
You can answer.
And just so you know, Paul, we need to take a break at 11:15, about 20 minutes from now.
MR. LAWRENCE: That's fine.
MR. TAMBE: So you can plan accordingly.
A. May I mark on page 22?
Q. Yes, that would be fine.
A. Okay.
Q. Just, you have to tell me what you're --
A. (Document review.) "Evaluating Pension Insurance Pricing." "In technical review," this is for the government.
MR. TAMBE: Well, he's going to tell you enough so you know what he's marking.
MR. LAWRENCE: Exactly.

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Q. I would say you don't have to go back before 2002.
A. On page 23, it's "Extracting Probabilistic Information from the Price of Interest Rate Options" from the Journal of Business paper.
Very relevant would be "The Price Pressure Hypothesis and Off-the-Run Treasury Bonds."
Q. What page are you on?
A. Twenty-four.
(Document review.) I'm sure to a financial economist the next three papers would be relevant.
Q. The three "Fair Value of Liabilities"?
A. Yes.
(Document review.) I don't know about the "Financial Engineering and Structured Products."
The "Financial Markets, Instruments and Institutions" is very relevant.
Q. Are you two the sole authors, or

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is it a collection?
A. No. We're the sole authors. I wrote all but two chapters. But he is a president of the Federal Reserve Bank, so he thought his name would sell more books.
I don't know about "Asset/Liability Management for Insurers in the New Era." "Inverse Floaters," that would definitely have something about it. "Valuation of Interest-Sensitive Financial Instruments," that's a book that I wrote together with Craig Merrill.
Q. I don't want to stop you if you need to you go back before 2000, but I was interested in your more recent writing.
A. Some of the best is yet to come. This investment managers for insurers, I can't be sure, but that was an he did volume. So, I wrote three or four papers in that book.
Q. Why don't we call it a day there. And if I need to go back --
A. I know there are a bunch back in the '70s and '80s.
Q. If there's something specific

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that you want to point to -- I'm just trying to avoid you having to go through every particular option.
A. Sure, there's one. In the back.
I guess the first time I wrote about it was actually my doctoral dissertation. That's 1978. That's one of the books. So that would be inflation and indexation. So that uses forward rates.
And I also have another important one in 1983, approximately; which is, "Duration and the Term Structure of Interest Rate Volatility." That paper led to my hiring by Goldman Sachs.
"Real Immunization with Index Bonds," 1984, that was me showing how to value index bonds before they existed, using forward curves and spot curves.
"The Term Structure of Interest Rate Volatility: A Binational Comparison" -- anyway, that's enough. There are probably about ten more. So I have maybe 20 papers total.
Q. Thank you.

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So, you've testified in quite a number of cases in the past four years as identified in your disclosure.

Is that fair?

A. Yes. I left off the most important one, that's a journal, "Financial Engineering."

MR. TAMBE: Going back to the articles?

THE WITNESS: Yes.

A. Let's see when that was. It even has forward in the title of the paper.

Q. It looks like on page 26 it's talking about quantity-adjusting options and forward contracts?

A. Yes.

Q. Okay. Thank you.

What percentage of your time over the past four years have been spent doing expert witness work?

A. Maybe 15 percent. That's a broad guess.

Q. And you've listed a number of cases that you've been involved in. I want to

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go over a few of those at least briefly.

A. Sure.

Q. The first is Salty Brine 1 v. United States of America.

Do you recall testifying as an expert in that case?

A. Yes.

Q. What side did you testify for?

A. The government.

Q. And what was the nature of the dispute there?

A. It involved phantom insurance policies and tax avoidance.

Q. And did your testimony in that case involve the validity of the forward curve?

A. No.

Q. Next case is Principal Life Insurance Company v. USA. Which side did you testify there?

A. Principal Life.

Q. And what generally was the dispute?

A. It related to the valuation of

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floating rate instruments and perpetual floaters, and the tax implications.

Q. What was the subject of your expert testimony?

A. On the floating rate instruments and their value and whether that value was correctly assigned to the tax elements.

Q. So how -- part of your testimony related to the proper method to value certain floating rate instruments. Is that right?

A. Yes.

Q. What floating rate instruments did you opine about in terms of value?

A. Perpetual floaters and when they were divided into certain tranches: a forward tranche and a present tranche.

Q. Did the valuation methodology differ depending upon whether you were valuing the forward tranche versus the present tranche?

A. No. It's the same methodology.

Q. And what is the methodology that you advocated for in terms of valuing these perpetual floating rate instruments?

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A. Well, in both cases, you use the term "structure of interest," the spot and forward rates to value them.

Q. Would those instruments that could be transacted in the market at the time that was in dispute, the time of valuation?

A. The market had deteriorated for those instruments, but they could still be valued.

Q. And how did you value them in a deteriorating market?

A. You could still value them with the underpinning spot and forward rate curves.

Q. And were you looking at the spot and forward rate curves for those particular instruments, or were you looking for the curves -- the spot and forward rate curves for what you opined were like instruments?

MR. TAMBE: Objection to the form of the question.

A. I don't recall. It was, like, years ago, or something.

Q. Do you recall how that case was resolved?

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A. The Internal Revenue Service stopped -- stopped all action. I don't know why.
Q. Okay.
A. And I don't know if it's going to resume at some point.
Q. The next case listed is Razorback Funding v. Scott Rothstein. What side were you on in that case?
A. TD Bank.
Q. And what was the nature of the dispute?
A. It was a Ponzi scheme related to sexual harassment claims where there were no victims or claimants. It was all fictitious.
Q. And what was the nature of your testimony?
A. I looked at the rates of return that were promised, which were somewhere between 800 percent and 5,000 percent over a three-month time period, and then suggested that sophisticated investors might think that there's something awry to have a risk-free investment that was offering those sorts of

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rates.
Q. Okay. Let's move to Claston, LLC v. USA. What side did you testify for in that case, if you recall?
A. I don't remember that.
Q. Claston, LLC, by and through Sunset Holdings, LLC v. USA?
A. Okay. I was on the USA side.
Q. And what was the nature of that dispute?
A. That was fraudulent taxation.
Q. What was the nature of your testimony?
A. That it was fraudulent.
Q. Ritchie Risk-Linked Strategies Trading v. Coventry First, LLC. What side were you on?
A. Coventry.
Q. What was the nature of that dispute?
A. That was on the sale of life settlements to a hedge fund.
Q. And what was the nature of your expert testimony?

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A. On the appropriate pricing of the life settlements.
Q. Now, you use the term pricing rather than valuation. Is that an intentional distinction in your mind?
A. No.
Q. And how did you go about valuing the pricing of the life settlements?
A. Well, I think that would take the rest of the deposition, a lot of time to go through that.
Q. Did it involve the use of spot and forward rates?
A. We certainly used spot rates.
Q. We can move on then.
MR. TAMBE: Is this a good time? It's almost 11:15. I just need to take a break for a call.
MR. LAWRENCE: Sure.
(Recess taken from 11:13 a.m. to 11:36 a.m.)
BY MR. LAWRENCE:
Q. We were going through the cases in which you had testified, and the next case

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identified by counsel for Lehman is Kim Nolte, Sherry Lewis on behalf of the CIGNA 401(k) plan v. CIGNA.
Do you recall that case?
A. Yes.
Q. Which side did you testify for?
A. On the side of CIGNA.
Q. And what was the nature of the dispute?
A. It had to do with the stable value investment fund and whether the rates generated were appropriate for their 401(k) plans.
Q. And what was the nature of your testimony?
A. They actually were better than just about any player in that market.
Q. In terms of the rates that were being offered?
A. Yes.
Q. The next case is World Holdings, LLC v. Federal Republic of Germany. What side did you testify on behalf of?
A. World Holdings.

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Q. And what was the nature of that dispute?
A. Gold bonds.
Q. And was the nature of your testimony?
A. What their value would be in today's dollars. They were from the pre-Nazi era.
Q. Similar to the Confederacy issue?
A. No, because they actually have backing and the governments are paying.
Q. What was your testimony as far as how you go about valuing these bonds?
A. Well, they were linked to gold prices. So I just looked at what the promises were and the language, and I could value it.
Q. So there was no -- strike that.
Did you look at a valuation as of a particular date or a valuation -- strike that.
Did you look at valuation into the future at all?
A. No.
Q. So all the gold price data that

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you utilized was known and verified from actual market transactions. Correct?
A. It was.
Q. The next case is Individual Investors v. Bankinter -- B-a-n-k-i-n-t-e-r S-a?
A. Yes.
Q. And which side did you testify for?
A. On the side of Bankinter.
Q. What was the nature of the dispute?
A. It had to do with the insolvency of Lehman Brothers and what kind of remedial actions that plaintiffs should take, and as of what date they should take them.
Q. What was the role of -- how did Lehman play in that case?
A. Just the investors had purchased some funds through Bankinter from Lehman Brothers.
Q. And what was the nature of your testimony?
A. It was just establishing the time

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when the market knew about the insolvency and what the prices were at that time, that moment. Whatever the instruments were, I forget.
Q. How did you go about determining when the market knew about the Lehman bankruptcy?
A. Well, we looked for the reports that came out at that time. And it was important, actually, what hour of the day when it went across the wires, and so we diagnosed all of that.
Q. So do I understand you were trying to find a minute, so-to-speak, in time when the market was informed about the Lehman bankruptcy in order to look at the price, I guess, immediately before that?
A. I don't remember that. But I do remember that we had to look at a very fine amount of time. So I don't remember if it was a minute before, a minute after, or whatever.
Q. You're trying to find what the market conditions -- what the market value of these instruments were at that moment in time?

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A. Yes.
Q. Again, you were looking at actual market data from the past rather than predictive market data for the future. Correct?
MR. TAMBE: Objection to the form.
You can answer.
A. I don't know that. As I sit here, it seemed to me the markets were very thin, and I can't remember what we had to do in this case, if we had to interpolate or what. I just don't remember. But it's in Spanish.
Q. Did you testify in Spanish?
A. My testimony is in Spanish. I'm fluent in Portuguese, but I wrote it in English. It was translated by an official translator, and that's all I know.
Q. Ormande v. Anthem, Inc. What side did you testify on behalf of?
A. The class, Ormande.
Q. And what was the nature of the dispute?

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A. Had to do with an initial public offering.

Q. And what was the nature of your expert testimony?

A. That's going back. It's one of the most complicated cases I've been involved in. I recall that there was no due diligence done on the initial public offering price by the people who were supposed to certify it.

And had they done a decent job, they would have come up with -- they wouldn't have left so much value on the table for the old shareholders. That's the gist of it.

Q. Stephens v. American Equity Investment.

A. Yes.

Q. What was that case about, and which side did you testify for?

A. I testified on the case of the defendant in that case. And the case boiled down to what was the point size of type in an insurance policy for surrender fees, and what is the front page. There was a law in California. Point size had to be a particular

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size, bold, and on the front page.

And there were three definitions of front page. There's boilerplate pages, and there's the terms page, which insurers call front page. Then they put it on that page.

But the plaintiffs acknowledge it should have been on the boilerplate page, and they stated: "Surrender fees 55 times the document."

The plaintiff said, "Well, I never opened the document."

So, anyway, she's a Berkley engineer.

Q. James Jeffrey v. London Life Insurance Company. What side did you testify on behalf of?

A. London Life Insurance.

Q. What was the nature of that dispute?

A. It was a merger between two companies and had to do with the rates of return that were provided on their insurance policies before and after the merger.

Q. Are you retained by Lehman in any

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other matters other than this matter?

A. No.

Q. Are you retained by Jones Day in any other matters other than this matter?

A. No.

Q. Have you ever conducted -- going back through your entire history of expert witnesses, have you ever conducted a lost profits calculation?

MR. TAMBE: Objection to the form of the question.

A. I'm almost sure I have. But as I sit here, I can't point to a case unless I look through all the cases. You gave me the last four years or five years' worth. But I'm sure I have.

Q. Do you recall how you conducted the lost profits analysis?

A. No. I imagine -- I know I've looked at lost profit calculations. I may have done some, but I don't recall.

Q. How would you go about conducting a lost profit analysis?

MR. TAMBE: Objection to the form

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of the question.

A. It would depend so much on circumstances particular, you know, to the case. So I don't have, like, a general way of doing it.

Q. Do you recall whether or not you engaged in such analysis with respect to a contract that was breached?

A. I don't recall.

Q. You indicate in your report that you assisted leading firms in the development of software for the valuation of assets and liabilities.

Do you recall that?

A. Yes.

Q. Which firms have you assisted in the development of software for the valuation of assets and liabilities?

A. Winklevoss, the father of the twins that are so famous, he has one of the biggest pension evaluation operations. I did for Goldman Sachs. Our method was used by Salomon Brothers for forward contracts in quantity adjusting options.

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I did for Swiss Re, for their annuities -- that's where I actually did the software -- and many other companies, in terms of the approaches to take.
Q. Have you ever consulted on the risks associated with entering into forward purchase agreements?
MR. TAMBE: Object to the form of the question.
You can answer.
A. That were consulted on it?
Q. Yes.
A. No. I've taught on it. I don't remember consulting on it. I may have.
Q. Tell me, in terms of that teaching that you just described, what do you teach about the risk of forward purchase agreements?
A. Well, I took a two-week course in Bank of America on that when I was a professor at Berkley. And from even before that date, I was teaching how to price those sorts of contracts. That would be 1978-79.
I took the course in about 1980.

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And they were more complex forward purchase agreements than the current contract because they involved multiple countries and currencies. So I taught that for years.
Q. You agree that there are risks involved in forward purchase agreements. Correct?
A. Sure.
Q. And is there, in terms of -- have you been involved in pricing for forward purchase agreements?
MR. TAMBE: Object to the form.
You can answer.
Q. That is how a dealer should price a forward purchase agreement?
A. I have in the case of the contracts I just mentioned, yes.
Q. And what -- how do you account for risk in the pricing of a forward purchase agreement?
A. Well, there's, counterparty risks. That's the major one.
Q. Are you familiar with the term "credit charge"?

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A. Yes.
Q. Is that a way -- is that an element that reflects the counterparty risk in a, for example, forward purchase agreement?
MR. TAMBE: Object to form.
Q. In terms of pricing?
MR. TAMBE: Same objection.
A. Counterparty risk is part of a forward agreement between two parties, and it's taken into account through negotiations. And it also depends on -- it can evolve over time. It depends on who's in the money and who's not.
But a typical agreement at the beginning is done on a par basis. But there can be credit charges as part of that.
Q. So if the dealer perceives that the counterparty has a greater potential for default, that would result in a larger credit charge. Is that fair?
A. It could.
Q. Have you ever hedged a forward purchase agreement?
A. I guess I have.

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Q. Tell me about that.
A. It's a homemade version. But I had a bonus that was an escalating bonus that went over five years. And because I had the chance of leaving the firm, I decided to hedge it all because I had to return part of it if I left.
So I used forward rates and I used interest rate caps and I got caplets for each of the five payments. It was a substantial amount, and so I needed to do that. So I did. I hedged it.
Q. And the purpose of hedging is to try to lock in the perceived rates that you were going to -- the return you were going to otherwise obtain from these five years of bonus payments. Is that right?
MR. TAMBE: Objection to form.
You can answer.
A. The purpose was: If I walked away, I would have to come up with some amount to give the firm back and the interest rates could change during the interim. So I hedged it.

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Q. Hedging is to protect against interest rate fluctuation. Is that fair?

A. That's right.

Q. But in terms of your work for financial institutions, you've never hedged a deal for Goldman or any other dealer. Is that right?

A. I've told them how to hedge it. I didn't do the transaction. I helped a lot of institutions on that.

Q. So they will present you with an instrument, and you will give advice as to how to hedge the risks associated with that instrument?

A. Or a portfolio, yes.

Q. And with respect to those instruments, the purpose of the hedge -- like for your personal hedge -- was to try to address the interest rate risks associated with entering into a transaction. Is that fair? Or a portfolio of transactions?

A. Yes.

Q. Did -- has any of your work involved analyzing transactions with -- or

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potential transactions with municipal government entities?

A. I've had to calculate the ratios that companies would need to use to hedge municipal debt.

Q. Explain that.

A. Well, I'm an asset liability management specialist. And so when a financial institution has, among in their assets, municipal debt, it has particular sensitivities in their value to movements in their interest rates.

And I had to look at that and estimate its sensitivity and what kind of liabilities -- if they had those kind of assets, what kind of liabilities would be appropriate and how they should price those.

Q. How does the fact that you're dealing with a municipal entity change or alter the thinking than if you're dealing with a corporate entity that you were doing the transaction with?

MR. TAMBE: Objection to form.

A. I wasn't dealing with a municipal

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entity. I was dealing with regular corporations who happen to own municipal debt.

Q. Right. I'm talking about on the other side of the deal. In other words, you have advised people who have, as you said, considered assets that are municipal debt and considered assets also that are corporate debt, I assume. Correct?

A. Yes.

Q. How is the fact that you're dealing with municipal debt as opposed to corporate debt matter? Or does it matter?

A. It's sensitive in its price movement, the value of the municipal bonds, to interest rates that take into account a tax treatment factor.

Q. Other than that, any differences?

A. Well, there's a lot of kinds of municipal debt, if it's a full faith and credit or if it's a revenue bond. They even have financial -- very short-term financial payment.

Q. And revenue bonds are considered more riskier that full faith bonds. Correct?

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MR. TAMBE: Objection to the form.

A. It depends on the source of revenue and the municipality standing behind it. They could be safer.

Q. With putting aside the exception, such as Detroit, if you have a relatively healthy municipality, would you say that full faith in credit bonds tend to be safer than revenue-backed bonds?

MR. TAMBE: Same objection.

A. You have to be more specific than that question. Name the municipality and name the source of revenue. If it's a Bridge at Turnpike revenue, pretty solid, versus, not just Detroit but eventually California cities.

And the municipalities have credit rating all over the map, but the revenue bonds are dependent upon the source of revenue.

Q. So with assessing that type of thing, you really want to know very much the specifics of the investment instrument that you're considering. Correct?

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A. If I'm investing in a security, I'd like to know the risk behind it.
Q. Or if you're advising someone about an investment securement, you want to know the specific risks involved in that instrument. Correct?
A. Yes.
Q. In this case, does your opinion depend upon the specific risk associated with the RFA, Reserve Fund Agreement, at issue?
A. My specific opinion is that forward rates are used in valuation of swaps, and that doesn't change.
Q. I understand that. But have you looked at -- have you read the Reserve Fund Agreement in this case?
A. I did.
Q. Does your opinion depend at all on the specific details of that instrument?
MR. TAMBE: Objection to the form.
You can answer.
A. That instrument is gone.
Q. Right.

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A. It's ineffective. So you're just looking at what the residual cash flows would have been, one way or the other, and evaluate that. But the rest of the instrument is gone.
Q. In your experience, is there any difference in the way that academics or researchers, such as you, would approach values as opposed to a trader on the floor?
MR. TAMBE: Objection to the form of the question.
A. It depends, truly, on the trader. Some traders use rules of thumb. Some use very technical models.
And so I've worked with the people that were in charge of investing Goldman Sachs' own capital. They use the most sophisticated models in the world. Whether all the traders understand and are beholden to those models, I don't know. But I don't think so.
Q. What is a consequence of the fact that certain people are trading based on models versus rules of thumb or other nonmodel-based perspectives in the market?

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MR. TAMBE: Objection to the form of the question.
A. People use tools to evaluate whether they are good deals or not. There are -- the better tool you have, the better assessment you can make.
Q. And I assume you're in favor of model-based tools as opposed to intuition?
A. That's my training.
Q. That's what you research and write about?
A. That's right.
Q. You would agree that the events in fall 2008, that are sometimes known as the "Great Recession" -- have you heard that terminology before, the "Great Recession"?
A. I have.
Q. Do you agree the Great Recession has caused substantial disruption in the markets?
A. I do.
Q. How so?
A. The liquidity in some markets was quite limited. Pricing was more difficult to

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do in those sorts of markets.
Q. Why was pricing more difficult to do?
A. Sometimes you would have to go to models if you couldn't find live transactions.
Q. What -- and maybe I'm wrong. But I assume that models tend to use live transaction data as the data points that are input into the model. Correct?
A. That's correct.
Q. So explain to me the distinction you were making between going to models rather than using live transactions?
A. Yes.
MR. TAMBE: Objection to the form of the question.
You can answer.
A. I just said, "Models are based on live transactions." Those are the inputs for the models. The models are ways for interpolating between dates and across instruments.
There's a lot of information. There was always a lot of information in the

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market for pricing securities. That doesn't mean every single security would attract traders at any given moment.

But that doesn't -- it also doesn't mean that you can't put a value on that instrument based upon value of cash flows and the timing of cash flows, which we can do through the term structure of interest rates.

Q. I want to try to make sure I understand the distinction you're drawing. You can certainly look at an instrument and look at its anticipated cash flows. Correct?

MR. TAMBE: Objection to the form.

You can answer.

A. You can look at an instrument if it has promised cash flows. You can model that.

Q. When you say "model that," you don't really need to model it because you have -- if you have a guaranteed cash flow, you have a guaranteed cash flow. It's just inputting those guaranteed flows into a model. Correct?

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A. That's what I thought I said. That's what I mean by "model." You put them into a formula and then you discount them and you add their values.

Q. So in terms of what I think you were saying before and distinguishing between talking about -- sorry -- the impacts of the great recession on the market, you indicated that there are certain instruments that because of lack of live transactional data, you would have to go to models. I'm still trying to understand that.

When you have a floating rate instrument without sufficient market transactions to give you valid data points, how do you use a model to come up with an alternative?

A. I don't know of any period during the great recession when we didn't have sufficient data to model something with floating interest rates. We did.

Q. So do I -- just -- just so I understand what you were saying before is: The preference always is to go and look at the

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actual transaction on a particular day because that tells you what market -- what is happening in the market in real time. Correct?

MR. TAMBE: Objection to form.

A. You're mixing a little bit of the time. If you look on a particular day, that doesn't tell you what something's worth. That tells you what something was worth at the moment that it traded. Right?

So you have some data that is relevant for what happened in the past. But if you have quotes available for the current time, that's different than whatever the past data happened to say, typically, if the price is -- the prices are moving all the time.

Q. What I'm trying to understand is the distinction you're making between the situation where you don't have live transactions, when you have to resort to modeling. Can you give me an example?

A. When you say "live transactions" --

Q. I think that was your

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terminology.

A. Okay. But live transactions, there's two ways to think of it. A transaction that was live and just happened or a transaction that's available to happen now.

Which do you mean?

Q. You used the terminology. So you tell me what you meant when you used the terminology.

A. Well, if you have transactions, bids and asks prices for instruments available now, that's more important than if you had something two minutes ago, stale data.

That doesn't mean that the stale data won't give you at least an indication of what it might be worth, depending on what's happened in the interim. There's some events that can happen in a very short period of time that change the value substantially.

Q. When a person generates a forward curve, should they be looking at the bid and ask numbers at a given point or should they be looking at actual completed transaction at a given point or some combination thereof?

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MR. TAMBE: Objection to the form of the question.
A. Who's looking?
Q. Who's looking? Say, a dealer trying to price an instrument.
A. So the dealers will look at the ask side. They also look at the bid side too. A lot of markets are very tight where the difference is minuscule.
Sometimes you'll get a quote where there's no difference. But yeah, they should look at the forward rates and spot rates if those are relevant to whatever instruments that they're concerned with.
Q. If you're doing an interest rate curve, a forward curve on interest rates for, say, T-Bills. Walk through how you generate your forward curve. What data points do you input?
A. On T-Bills -- you have T-Bills of various maturities going out through 360 days. It's not a very interesting curve but --
Q. Let's take in a security that can go out -- you can buy for one year -- three

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months up to thirty years.
A. What data do you take?
Q. Yeah.
A. You take -- you have the bond prices. Associated with the bond prices, is a yield. It can be calculated. Sometimes the bonds are even quoted in terms of yield as opposed to price. They're two sides of the same coin.
Those yields are particular to an instrument. And what you need to do, if you're going to price anything other than that instrument, you have to calculate spot rates and forward rates.
Now, the reason I say that is because the yield is particular to that instrument and no other instrument on Earth. It reflects the particular cash flows and the timing of the cash flows and the size of the cash flows of that instrument.
Now, closely related to other instruments, the timing of the cash flows might be slightly different, but it's credit-worthiness backing are the same.

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But the yield that you get from that particular instrument, treasury bond, is particular only to that treasury bond. So you have to extract from that yield to maturity something that's useful, which is a spot rate.
And the yield to maturity on a treasury bond is that -- you're not going to like this -- a dollar duration weighted average of the underlying spot rates or forward rates. And the dollar duration ratings depend upon that particular instrument, which is unique to that instrument, and they don't apply to any other instrument.
That's why you can't use yields to maturity on a bond to price to another bond, not if you're vigorous. You decompose it to the underlying spot rates which you can use for any other instrument and their associated forward rates, which again are two sides of a different coin.
Q. So you have a bond, and you see what the prices are for someone purchasing the bond of -- the maturities out on different

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bonds for three months, six months, five years, ten years, twenty years. Correct?
A. Yes.
Q. And you can look at transactions and figure out what the yield was for a particular transaction. Correct?
A. Yes.
Q. Okay. And then you're trying to extrapolate out information from those sets of transactions to yield the spot rates. Correct?
A. Yes.
Q. And -- again, because I don't want to make an assumption -- do you use those transactions to generate a spot rate?
A. There's something called "bootstrapping," which is the oldest and most common method, where you're able to determine what spot rates were associated with that bond to create the particular yield to maturity.
And it's an iterative process. You start with one bond, like the treasury bill. The spot rate and the yield are one in the same, if the yield is calculated

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appropriately.

It's not a discount -- it's usually reported on a discount basis, but you can turn that into a yield maturity. It's one in the same thing. You can take that treasury bill and go out and mature. Now, you have a bond with coupons.

So its yield isn't helpful, but its price is. You know what the price of the whole bond is. You know what the market is telling you the first years' worth is because we have certainty on that.

So it just takes algebra to figure out the forward rate, and also the spot rate, for two years. Once you've figured out that, you can continue on out three, four, five --

You don't even really need to do that now in zero-coupon bonds because it tells you all the way out to thirty years what everything is worth on a quarterly basis.

Q. So how do you use that information -- let's say you want to assess an agency security in the yield --

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A. Yes.

Q. -- how would you go about using the information? Do you use the information from the treasuries for the agency securities analysis?

A. You could, but then you'd have to add a spread, because it's not the same market. That spread would be a positive spread.

But the agency market is really quite rich in data. So you can also use a bootstrapping method, but you're going to have some voids because it's not as deep as the treasury market. You have to interpolate.

Q. And how do you interpolate those missing data points in the agency market?

A. Well, the Treasury produces a formula for doing that, and it's very useful for the agency market as well. It shows you exactly how they interpolate and they publish these things every day.

The market is actually interested in these things every minute. So there are other programs that will do that.

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Q. You gave the example in your report of the runner with the hundred-yard dash.

A. Yes.

Q. And I assume the point there was that if you know the time or the yield at the end of the hundred yards and you know the time or the yield at the end of fifty yards, you can extrapolate and figure out the yield or time for the final fifty yards. Correct?

A. That was the idea.

Q. The same way with respect to a security or an instrument. If you know what the yield is through nine years, you know what the yield is through ten years, you can extrapolate what the one-year yield would be if you purchased a year nine. Correct?

A. You can. But it's a little more complicated because unless it's a zero-coupon bond, it would be akin to the runner getting to the 50-yard line and throwing off his water bottle and then running the rest of it, and throwing off coupons.

And so it takes someone with a

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little bit of skill to do this. And there are readily available programs now to do it.

Q. How do you account for the difficulty you described, sticking with the agency securities? You have market information for nine, you have market information for ten.

You're trying to figure out what someone nine years from now could yield on a one-year treasury -- I'm sorry -- one-year agency. How do you go about making that? You said there's some complication to it, and you would have to make adjustments?

A. Because the cash flows aren't one time per year. They are typically semi-annual cash flows. Some you can even have quarterly.

Q. Right.

A. But most bonds are semi-annual. So if you're trying to get between year, say, nine and ten, and you have instruments on both dates, but you don't have one on nine and a half years, you have to make an interpolation for a nine-and-a-half year rate.

Q. How do you do that?

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A. Well, the published programs are quite available, and they typically follow a curve that best explains all of the data points where you have current quotations.
Q. And is it always a curve rather than straight line between two data points?
A. To the -- to the eye, some of it might look like a straight line when you get out far enough.
Q. But, technically, there's always some curvature in there?
A. Technically, yes.
Q. So the forward curve depends on market data. Correct?
A. Yes.
Q. And it gives you -- it gives you information based on market expectations of future interest rates. Correct?
A. There are theories. If you take a couple of steps and are willing to make a bunch of assumptions, you could -- you could try to say that, yes.
Q. You could, as opposed to what?
A. Well, the forward curve tells you

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what the price of making a commitment is in the future. It tells you what rate you need to be able to transact at. And then that can be adjusted for other costs and things like that.
Q. You would agree, though, that the forward curve is, more often than not, wrong in the sense that it will tell you on day one what the predicted yield will be on year eight. But if you went out to year eight, the chances of it actually being that point on a forward curve would be pretty small?
MR. TAMBE: Objection to the form of the question.
You can answer.
A. The forward curve doesn't tell you the predicted value. Like I said, you need to take a couple of assumptions if you want to do that. And depending on the assumptions, it would come up with different predicted values.
But the forward rate, that's not what it's all about. It's telling you today's cost for making a forward commitment either

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buying or selling, and it doesn't really have -- there's no necessary link between that and predictions.
Q. So it's not a predictive tool?
A. People sometimes use it as a predictive tool if they have various theories that they want to try to predict things.
I mean, people are always trying to predict things in the market. They're looking for an edge. Forward rates, I've seen it used before as a predictive tool.
Q. Do you think it's an appropriate predictive tool to predict what, in fact, interest rates will be five years out?
A. Is it an appropriate tool? It embeds all the information we currently have about the future. So if you have more information somehow that the market doesn't, you wouldn't want to use a forward rate.
If you did use a forward rate, the question is: Is it a predictor of the future short rate? Not necessarily.
You have to invoke a whole architecture of theory. One has to do with

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the risk aversion. One has to do with risk preference, liquidity preference -- there are all sorts of things that people of -- they're trying to use forward rates to help them predict the future, maybe, and they're seeing if they can. But that's not what the forward rates about. The forward rates is independent of that.
Q. Would you agree that if you took a forward rate on a given day, looked at what it predicted out for short-term rates over time, keep looking at the forward curve generated day-to-day, that the forward curve would mispredict short-term rates in over 90 percent of the cases?
MR. TAMBE: Objection to the form of the question.
Q. I won't use the word "predict." The forward curve -- look at the each day, what the forward curve is. Look at then what actual short-term rates turn out to be. Would you agree that the forward curve generates a short-term rate that is not accurate more than 90 percent of the time?

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MR. TAMBE: Same objection.
A. I think I understand the question.
Let me ask what you mean by "accurate."
Q. Meaning, you look at the forward curve generated on a particular day, say March 25, 2009, and you use that forward curve to give you information about what a six-month agency yield might be eight years from now. Correct?
A. Correct.
Q. And then you now go out eight years, and you look at what is the actual six-month yield on that same agency security, eight years out.
So I'm comparing those two numbers: the actual eight years out, and the number generated by the forward curve eight years earlier. Those numbers would be different at least 90 percent of the time. Is that fair?
MR. TAMBE: Objection to the form of the question.

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A. My question to you is: What do you mean by "accurate" or "different"? If one says 6.23 percent and the other says 6.24, would that be a failure of prediction?
Q. Let's start with that. Would you agree that -- in terms of exact numbers -- that it would be different more than 90 percent of the time?
A. I don't know. If it's more than 90 percent --
Q. If you haven't done that work, you can just say, "I don't know."
A. That's not how economists look at things. Maybe that's what they do in Las Vegas, point spreads, and things like that. We look at market data as a rich source of information for market consensus of all these players in the market, and we try to extract information from that.
But I've never heard 90 percent of the time these -- the forward rates get the -- are -- are a deviance with the actual future rate that ensues. That doesn't mean forward rates aren't useful.

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Q. That wasn't my question. My question is simply: Whether or not you would agree that the forward rate predicted on a given day for eight years out is more likely than not going to be different than the actual rate on that given day eight years out.
MR. TAMBE: Objection to the form.
A. Well, now you said the forward rate predicted.
Q. I know you don't like to do the prediction work.
A. It doesn't predict.
Q. The forward curve gives you a number?
A. It gives you a number, today's price of making a future commitment.
Q. Right. And you go out eight years, and you look to see whether or not the six-month yield is at the number the forward curve generated.
Would you agree it's more likely than not that the eight-year-out number is going to be different than the number that was

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generated by the forward curve?
A. You're creating a link where there's no necessary link. Eight years from now there's different information, different prices.
The forward rate tells you today's price of making a future commitment. It doesn't tell you the future price of making that commitment. You have to add a whole bunch of assumptions to get to that point.
Q. Now, the typical oversimplified version of modeling is, sort of, the garbage-in-garbage-out equation, which means that the quality of the data input is important to understanding the quality of the model. Correct?
A. Yes.
Q. And the forward curve model depends on market data. Correct? The data inputs are market information?
A. The forward curve does not depend upon market data. The calibration of the forward curve depends upon market data.
Q. The inputs into the -- the data

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inputs into the forward curve is market data. Correct?
A. Yes.
Q. You could input data of the opinions of a thousand economists and use that instead. Correct?
A. You could.
Q. You could take a thousand people on the street and ask them their view of yields, eight years out, and do a forward curve based on the thousand people on the street. Correct?
A. You could.
Q. And the usefulness of the forward curve depends upon its usefulness in the market. Correct?
MR. TAMBE: Objection to the form of the question.
A. It has lots of uses. The market is one of them.
THE WITNESS: Could you read back two questions ago where Mr. Lawrence was talking about going to a thousand economists -- which is near and dear to

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my heart because I see an employment opportunity here -- and asking them what the forward curve is or something like that?
Q. I meant -- what I said was: You get data from the market about what yields will be at a particular point out into the future. And that is data that then is used to generate a forward curve. Right?
And you could also go to a thousand economists and say, "What do you expect the yields to be -- a year, two years, three years, five years, ten years, twenty years out?"
And you put that as data points and generate a forward curve. Correct? You may call it something else, but you're generating a curve that reflects the economists' predictions?
A. Well, could you read that entire statement back? Because the first part of it is a question -- had an assumption there that I didn't buy. But go ahead and read it.
MR. LAWRENCE: Okay.

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(Record read.)
THE WITNESS: That's enough. No. So we don't need the rest of the question.
Q. I'm sorry. So what's wrong with that statement? You said you disagreed with it.
A. That you use all these rates about what future interest rates will be, and that could be used to generate a forward curve. That implies a prediction of that future rate --
Q. Or -- I'm sorry.
A. -- as generated based upon current data. You just need a calculator. You don't need expectations in there.
A thousand economists or one economists, I can do it without any expectations. Just give me a calculator.
Q. I understand. The word, "expectations" may be the wrong word. In market data, you're doing data on what people are paying for particular instruments that have, you know, dates five, ten, fifteen years

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out. Correct?
A. Correct.
Q. With economists, I think you would be asking them to do their best prediction on what rates would be on agency securities five, ten, fifteen years out. But you could generate a forward curve based on economists' predictions. Correct?
A. That's not a forward curve. A forward curve has to do only with current prices.
Q. So you would generate -- you would generate a curve and call it something else?
A. Call it "predictions," yeah.
Q. Because, certainly, the forward curve is not about predictions.
A. No. It is to some people. But that's not how it's constructed.
Q. That's now how it's supposed to be used in your view as an economist and in your view, based on your opinion, in this case?
A. I won't say that's not how it's

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supposed to be used. People can use the curve. And if they can get some information on or about the future, bless their hearts. But it's calculated based upon the present.

Q. You're not opining that it's a good predictive tool. Correct?

A. I'm not saying one way or the other. There's a big debate about that.

MR. LAWRENCE: Why don't we take a lunch break.

(Lunch recess taken from 12:34 p.m. to 1:41 p.m.)

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A F T E R N O O N S E S S I O N

(Time noted: 1:41 p.m.)

D A V I D F. B A B B E L, resumed and testified as follows:

CONTINUED EXAMINATION

BY MR. LAWRENCE:

Q. If you could turn to page 2 of your report.

A. Sure.

Q. Before we get there, have you ever heard of a piece called "Valuing Derivatives: Funding Value Adjustments and Fair Value" by Hall and White, John Hall and Alan White?

A. I don't recall the title of it, but I've read books of theirs and I've read papers of theirs.

Q. What is the estimation of Mr. Hall and Mr. White within your area of expertise, financial market -- finances?

MR. TAMBE: Objection to the form of the question.

Q. Are they considered reliable persons?

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A. Well, they cite me, so they must be right.

Q. There you go.

A. They have a specialty in that area. They're cited a lot.

Q. They're cited a lot in that field, in the area in which they write?

A. They have interest rate models. That's a two-factor model that then became a famous model for stochastic processes of interest rates.

Q. And their work is cited within your field of expertise?

A. Yes. I know a lot about that field.

Q. If you'll turn to page 2 of your report under "Assignment."

A. Yes.

Q. You were asked to review the Curry and Hasterok valuation report. Is that correct?

A. That is correct.

Q. And as I understand it, you have not calculated an alternative number that

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would put TSA back in the same position it would have enjoyed had the RFA not been terminated. Is that right?

A. That's right.

Q. Nor have you opined as to the appropriate methodology to come up with that number. Correct?

MR. TAMBE: Objection to the form of the question.

Q. I understand you criticize their methodology.

A. Yes.

Q. But you're not proposing an alternative methodology as to how to arrive at the number that would put TSA back in the same position it would have enjoyed had the RFA not been terminated?

A. I didn't do that calculation. I did say that when you're looking at these sorts of instruments, you have to use forward rates and spot rates of interest.

Q. We'll talk about that in more detail.

A. Okay.

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Q. So that would be a tool that you think is appropriate to use in a valuation exercise such as the one presented here?
A. Forward rates and spot rates, yes.
Q. Okay. If you turn to page 4, one of the opinions that you identify is that you think it was inappropriate for Mr. Curry and Mr. Hasterok to use historically low interest rates to compute the flow of cash shortfalls. Correct?
A. Yes.
Q. Okay. Now, those historically low short-term interest rates are interest rates reflective of the period from late 2008 to present. Correct?
MR. TAMBE: Objection to the form of the question.
A. They were historically low, especially in the last three years.
Q. And do you have a prediction of what interest -- short-term interest rates are going to be next year?
A. No.

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Q. Five years from now?
A. I have a direction, but I don't have a prediction number.
Q. Now, are you aware of any other period of time where U.S. short-term interest rates have remained low and stable for an extended period of time?
A. Not under conditions like we have today with massive deficit spending and an unprecedented monetary policy of printing money as if it's going out of style.
Q. Do you agree that in the 1950s and 1960s, short-term interest rates were low over an extended period of time?
A. They were, during the early '50s during the Eisenhower administration. They didn't get this low, but they were low. Once President Johnson came on, and even partly Kennedy, we started seeing some upward movement.
Q. So at least in the '50s through the early '60s, interest rates were low and steady, though not as low as they are now?
A. Well, they were relatively low

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and relatively steady during the early '60s and particularly the '50s.
Q. And you have not opined as to what an appropriate short-term interest rate should be that -- in lieu of what Mr. Curry and Mr. Hasterok have suggested. Correct?
MR. TAMBE: Objection to the form of the question.
A. What a short-term rate should be?
Q. Well, you're criticizing their use of historically low short-term rates, you don't have a prediction about the future, and I'm just confirming that I didn't miss -- you didn't provide an opinion that Mr. Curry or Mr. Hasterok should have used X or Y or Z instead of the short-term interest rates that they use.
A. I thought I said that they should use forward rates. That's -- if you use something other than forward rates for projections, you end up with free money, infinite arbitrage opportunities, inconsistent pricing with the market.
The spot rate tells you what any

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cash flow is worth at any future point in time, and the forward rate tells you what you can lock in at any future point in time.
So they were using something -- even the federal government couldn't sell any of their debt if they were trying to price it the way that Curry and Hasterok are pricing it. You can't use historical rates to price future interest commitments.
Q. Well, is it your understanding that TSA has the ability to lock in interest rates for a 23-year period during the remainder of the term of the contract?
A. TSA would have the ability, as anyone would. I can lock in the interest rate. You could too. They could too.
Now, if you ask whether they could with these particular funds that were in a particular bucket, maybe not. But the market can lock in these cash flows.
Q. But just to be clear, you haven't looked at anything about the indenture of the bonds that limits the investments that TSA can make with respect to the reserve fund, have

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you?
A. I've read about it in reports, but I haven't looked at the indenture.
Q. So you can't tell us, based on your independent review of the indenture whether or not TSA could have locked in rates at any particular level or not?
A. I can't tell you what TSA could do.
Q. And you haven't looked at the statutory authority creating TSA to see what limitations, if any, exists on their authority to invest funds. Correct?
A. Well, I've read in the reports what they say their limitations were.
Q. Have you done any independent investigation to determine what those limitations are with respect to the TSA's investment authority?
A. No.
Q. Forward rates are important if you can lock in those rates. Correct?
MR. TAMBE: Objection to the form of the question.

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A. Forward rates are important whether you can lock them in or not. They tell you the price of money at different periods of time, today's price of locking those in. Whether you can lock it in or not, the value is independent of whether you can do it.
Q. Well, if I don't have the capability to invest in the ways that are necessary to lock in the rates derived from the forward curve, what good does it do me?
A. It tells you what the costs are. And it tells you what the market value is.
Q. It doesn't tell you what the value is to me in terms of what I can transact in the market. Correct?
A. It doesn't tell you that.
Q. Now, you would agree that the -- and if the word "indication" is wrong, let me know.
A. Can I go back to the last question. I don't know that I -- could you read that again for me. I think I was incomplete in my answer.

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(Record read.)
Q. Can I go on to my next question?
A. Yes.
Q. Thank you. And, if the word "indication" bothers you, let me know. And tell me what would be a better word.
So the forward curve as of March 25, 2009, indicated a -- how short-term interest rates would look from 2009 through February 24, 2014. Correct?
A. No.
Q. Please correct my statement.
MR. TAMBE: Objection to the form of the question.
You can answer.
Q. What is incorrect about my question?
A. How short-term rates should look. I think those were your words.
Q. I want to use the terminology that works for you. So you tell me what terminology works for you. What does the forward rate tell us about -- other than what market participants think short-term rates

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will be, it doesn't tell us anything more than that. Right?
MR. TAMBE: Objection to form.
A. It doesn't necessarily tell you that.
Q. Okay.
A. It tells you the price of money today to lock in the future commitment. It has embedded in it the consensus of the market for what the costs of making those commitments are.
Q. So if we look at the forward curve as of March 25, 2009, it will -- it indicated what the price would be to lock in the interest rate as of February 24, 2014. Correct?
A. What the price would be to lock in the interest rate as of February 24, yes, it would tell you.
Q. And it would tell you what the yield would be as of February 24, 2014, that you were locking in. Correct?
A. It would.
Q. So is it fair to say that the

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yields that appear on the forward curve as of March 25, 2009, are different than the yield that could have been locked in on January of 2014, if you had a forward curve, say, on that day?
A. Yes.
Q. Different than January of 2010?
A. It would be different than March 26 of 2009.
Q. Every day is different?
A. Every day.
Q. So if we wanted to actually look at the reality of short-term interest rates up to February 24, 2014, there's actual real data that we could look to and say, here are the actual short-term interest rates. Correct?
A. Correct.
Q. Okay. And I think, as you've just said, if we ran a future curve as of the date of your report, February 24, 2014, it would look different in terms of short-term interest rates on a future curve on March 25, 2009. Correct?
A. Yes.

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Q. And the curve would be lower; that is, the yields along that curve would be substantially lower than the yields on the curve that was generated on March 25, 2009. Correct?
MR. TAMBE: Objection to form.
A. Are you talking about my report and the chart I did?
Q. If you want to reference the chart, that's fine.
A. Because those were based on treasuries. So the treasuries have a different market than LIBOR. And, yes, they were lower -- and the forward curves, and also the spot curves.
I'm looking at figure 2; which looks at the spot rate curves.
Q. The figure 2 is talking about comparing 2002 to 2009. Correct?
A. Yes. Maybe I misheard you.
Q. That's fine. We can start with this one.
And the 2002 curve shows higher yields than the 2009 curve. Correct?

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A. Correct.
Q. And if we did a curve, dated February 24, 2014, that would show lower yields than the 2009 curve. Is that correct?
A. For the treasuries, yes.
Q. Would that be different for other short-term instruments?
A. Yes.
Q. So is it your understanding that there are short-term instruments available -- that they are short-term instruments that you would generate a forward curb with respect to -- that would be showing higher yields today than in March of 2009?
A. I don't know. I haven't done that. I do know that other short-term interest rate curves are higher than the treasury. I also know that because of the financial crisis, which you are calling the Great Recession, treasury became a safe haven.
It pushed up the demand for treasury instruments and pushed their accompanying yields downward, more than any other market. So in LIBOR, you would not see

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a spread like this between those two dates, to this degree.
Q. Okay. But if we ran a LIBOR curve as of March 25, 2009, and a LIBOR curve as of February 24, 2014, the 2014 curve would show lower yields than the 2009 curve. Is that fair?
A. It could be. I haven't looked at that.
Q. Okay.
A. I will say I looked at a LIBOR six-month rate on those two dates, and they looked about the same.
Q. What -- which --
A. These two dates here.
Q. Okay.
A. But I don't know about the entire curve.
Q. Just so I understand, what you just said: You looked at the LIBOR six-month rate in 2002 and 2009, and the six-month rate was relatively close in those two periods?
A. On the chart, it looked that way to me.

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Q. But you didn't run a curve?
A. No, I didn't. I just looked at the short one.
Q. Do you agree that short-term rates tend to be lower than mid-term rates?
A. I've seen every kind of shape of a yield curve imaginable, and sometimes they are and sometimes they aren't.
Q. Well, you're a professor of finance. Would you agree, more often than not, that short-term rates are lower than mid-term rates?
A. I would.
Q. In paragraph 2, you say the forward rates and the term structure of interest rates as of March 25, 2009 -- I'm just trying to reduce that.
You're saying that the forward curve, as of March 25, 2009, would suggest a rate substantially higher than that assumed by Mr. Curry and Hasterok. Correct?
A. Yes.
Q. I don't understand your sentence, "To do otherwise, would imply values that have

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nothing to do with the values seen in the marketplace."
Could you explain that?
A. Sure. When you're valuing a floating rate leg of a swap, the market practice is consistent with finance theory. And you use -- you input the forward rates for the cash flow projections and then you discount by the set of forward rates associated with that. When you do so, you get a swap that's valued at par, typically.
If you assume some other -- something else -- if you input some other projected cash flows, such as Mr. Curry and Hasterok, and then you discount them by the appropriate forward curve, you get something that's worth a small fraction of what these instruments trade for in the marketplace.
And so I said -- you read a sentence here, but --
Q. Sorry. It was, "To do others would imply values that have nothing to do with the values seen in the marketplace."
A. Right. So for instance, if you

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use Mr. Curry and Hasterok's assumption, you would get a value that's one-seventh as much as something, one-fifth as much, something like that. That's what a floating rate instrument -- where you're just getting the coupons. You don't get the principal of what it's worth in the marketplace.
Anyway, it's a small fraction. I've never seen anything trade like that. That's not how it works. And it's inconsistent with valuation principals. The forward and spot rate curves tell you what the value of money is: any amount of money from one dollar to a million dollars or more on any particular date.
Q. So are you saying if I have a dollar that I want to lock in a rate of return reflected in the forward curve, I can do that? I can go someplace, and somebody's going to lock me in for a dollar?
A. You may find someone. Usually, it takes a lot more than that.
Q. The ability to take advantage of the information in the forward curve depends

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on the ability to transact freely in the market. Correct?
MR. TAMBE: Objection to the form of the question.
A. No. You can take advantage of it because the instruments that you buy all reflect that. So you can sell instruments or buy instruments --
Q. No, I'm asking you a question.
A. -- but they reflect those interest rates.
Q. Right. My question is: You just acknowledged, I think, that if I have a dollar, I'm not going to get anyone to do business with me. You need a lot more than that?
A. Yes.
Q. My question in follow up to that was: In order to take advantage or to reflect the information that's in the forward curve, I would need to be in a position where I can transact in the market. Is that correct or not?
MR. TAMBE: Objection to the form

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of the question.
THE WITNESS: Can you just read it back?
(Record read.)
A. To take advantage of or reflect? Could you rephrase that question?
Q. I understand the forward curve demonstrates what you believe the market-available yield would be. Correct?
MR. TAMBE: Objection to the form of the question.
Q. Is that correct or not?
A. The yield curve reflects the available yield?
Q. What's available in the market.
A. Yes.
Q. In order for an individual or an entity to take advantage of that, in order to achieve that yield, I have to be able to transact in the market. Is that correct?
A. You have to be able to qualify to transact. So I did five years' worth of this, and it cost me $14,000 for a lot of money. And it took very little money on my part to

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lock in all these rates.
And I think you could do it. I imagine TSA could do it for that. That would be just part of a rounding error or something.
Q. That's an assumption on your part?
A. Yes.
MR. TAMBE: Well, your question is a hypothetical, so ...
MR. LAWRENCE: His statement about the TSA was an assumption on his part.
Q. You continued in the next paragraph, 3, you provide further criticism of the .65 interest rate.
Do you see that?
MR. TAMBE: Page 4?
MR. LAWRENCE: Yes, we're still on page 4.
Q. Do you see that paragraph 3?
A. In the summary of opinions?
Q. Yes.
A. Okay.
Q. You say, "Using the .65 interest

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rate is speculative."
Do you see that?
A. Yes.
Q. Would you agree that any guess about what future interest rates will be is speculative?
A. Any guess is a guess. Some guesses are better than others. This is a horrible guess.
Q. But any guess is speculative?
A. How are you defining "speculative" for this purpose?
Q. How are you defining "speculative" as you use the term here?
A. That we don't know the future.
Q. So since we don't know the future, any assumption about interest rates in the future would indeed be speculative. Correct?
MR. TAMBE: Objection to the form.
You can answer.
A. I say, "Speculative, unsupported." It's speculative in that sense.

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They can't point to any financial theory that would justify that prediction. They can't point to any market praise that would justify such a prediction.
In fact, we have five experts all saying forward rates are important. We have the entire market saying all forward rates are important, including Curry and Hasterok.
They never used this method before. They invented it out of whole cloth, and it's laughable. I haven't seen anything like this in my 30 years. They would have flunked my 101 class in finance.
Q. I assume you think it's laughable, too, that the TSA has lost tens of millions of dollars since Lehman defaulted on its bankruptcy?
MR. TAMBE: I don't think that's --
Objection to ---
A. That's a nonsecretor --
Q. Is it laughable, sir?
A. I don't think it's laughable.
Q. These are taxpayer moneys that

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are being lost. Is that laughable, sir?

A. I think it's sad that TSA invested them in money markets. They had other options and you know it.

Q. What options would you suggest to retain the same level of risk that was in the RFA, given the constraints the TSA had in the bond indenture and in their authorizing authority?

MR. TAMBE: Objection to the form of the question.

A. They could have mimicked something like the floating leg of a swap, by investing in appropriate money market instruments and not throwing away so much money.

Q. What are appropriate money market instruments that they could have invested in?

A. Well, I don't know what TSA is limited to. I know that, at least under the RFA and the indenture, they had some limits. I don't know to what extent they applied, but they gave a list of things that they could invest in.

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And money markets, you're paying through the nose to get daily liquidity. Why does TSA need daily liquidity? Why couldn't they get six-month liquidity?

Q. So my question was: Can you identify any other instruments that you believe that should have been invested in given the indenture requirements and authority requirements that would have provided the same risk profile as the RFA?

MR. TAMBE: Objection to the form of the question.

You can answer.

A. Well, when you say, "the same risk profile," how are you defining that?

Q. I'm defining the risk that the TSA would face of nonperformance and including loss of principal.

MR. TAMBE: Objection to the form of the question.

Could you just read back that last question?

(Record read.)

MR. TAMBE: So you're asking him

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to assume that they would not lose principal? Is that the assumption you're asking him to make?

MR. LAWRENCE: That the risk profile and that the chance that principal would be lost within the RFA is mirrored; for example, in an alternative instrument.

So for example, an uncollateralized GIC would raise the possibility of loss of principal. Correct?

A. An uncollateralized --

MR. TAMBE: Continuing objection to the form of the question.

Q. Is that correct?

A. When you said, to mimic the same risk, what you did was buy -- you entered into a swap agreement, essentially, with a counterparty that was going to go bankrupt in a few years.

Are there other counterparties that you may enter into that would have a similar chance of going into bankruptcy? You

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want to replace exactly the same risk. Right?

Q. I would like to see -- you to tell me whether there are other instruments that would have the same risk involved. Here, the risk was the failure of Lehman to pay interest because the dollars were not invested in Lehman. Lehman wasn't holding the dollars. And so, fortunately, the $45 million principal remains intact.

So there's a concern, a risk, that the TSA has to make sure that that principal remains intact?

A. Yes.

MR. TAMBE: Objection to the form of the question.

Q. So, we're looking for a financial instrument that was available on March 2009, that in your estimation would best approximate the risk that TSA was trying to address in the RFA.

A. TSA entered into a swap agreement. It had a fixed leg and a floating leg. Because the fixed leg is not available, they could take the same side that Lehman

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took, if they wanted, and invest in floating rate instruments.
The best floating rate instruments will have interest rates that ensue over time but will provide the return of principal at the end of the intervals, the same as before.
And it had the same present value, at least at the outset, to Lehman Brothers, as it had to TSA, approximately the same present value. And undertaking a series of investments in the future with a floating rate would similarly have a present value that reflects the full principal that you have.
As you represented to me earlier, and some of the witnesses represented, the fixed leg is precluded right now because of unpopularity of the tobacco settlement swaps. But you could get a floating leg that is worth the same amount of money and invest your money similarly to what is actually assumed in the swap pricing.
Q. Let's -- let's just assume -- well, let's step back because the testimony

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has been that, not just tobacco RFAs, but that Reserve Funds Agreements, in general, are not available in the market.
Do you understand that?
A. Well, that's what you said. I don't know --
Q. That's what Lehman's expert said.
A. That's fine.
MR. TAMBE: You're asking him to assume that fact. Is that what you're asking?
MR. LAWRENCE: That's what he testified to yesterday. So ...
MR. TAMBE: What are you asking this witness for? Not what someone else testified to you yesterday. What are you asking him to assume for purposes of the next question?
Q. Assume that Lehman's expert is correct in that point, that there was no active market for Reserve Fund Agreements.
A. Okay.
Q. There hasn't been, to his knowledge, a Reserve Fund Agreement transacted

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since 2009?
A. Yes.
Q. Keep that in mind as we go forward in this deposition.
A. Yes.
Q. Have you done any calculation of what TSA's losses would be if they had, for example, purchased government agency securities on a six-month basis every six months between March 2009 and today?
A. I haven't done the calculation.
Q. You could do that. Right?
We know what they could have received, what yield they could have received, if they purchased in March 25, 2009. Correct?
Let's move to the actual date. So June 2009, they would have purchased. Correct? And we can look at the market data and see what yield they could obtain. Correct?
A. Yes.
Q. And what costs they would incur in making that transaction. Correct?
A. Yes.

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Q. And then you can go six months out from there and see what the yields were in December of 2009 and do that same exercise every six months to date. Correct?
A. You could.
Q. And you could compare that actual interest that could have been earned with the guaranteed interest that Lehman agreed to provide. Correct?
A. Right.
Q. And that is one way that you could determine the loss that TSA suffered, at least between 2009 and 2014. Correct?
A. Assuming that they bought what instruments, that they bought money -- the money market that they actually purchased?
Q. I'm just saying, assuming that they bought one of the eligible securities under the RFA.
A. Yes, you could calculate that.
Q. And that would be a reflection of the actual loss, in your view, that the TSA has suffered between 2009 and 2014. Correct?
MR. TAMBE: Objection to the form

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of the question.

You can answer.

A. No. The loss depends upon the value of the instrument. And the value of the instrument would reflect all of the future possibilities as well.

Q. Have you read the termination amount provision of the RFA?

A. Yes.

Q. Does it say anywhere in there that the termination amount shall be determined by the theoretical value of the instrument?

A. It talks about using market quotes, and forward curves are dependent on market quotes. So it embraces the notion of forward curves because that's how these floating rate instruments are valued.

And when I talk about the value of the procedure, we're not just talking about the first four years of cost flows. This is twenty-three years. And value is going to reflect the full length of time that you're going to be able to do this.

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Q. Are you finished?

A. Well, I can stop now.

Q. I agree with you, that the first step in the process to obtain market quotes would typically involve a dealer using the forward curve to come up with a market quote. We can agree on that.

A. Yes.

Q. That would be standard in the industry, so to speak?

A. It would be.

Q. And I agree, just looking at that provision, that it does contemplate that if you can get market quotes, that will tell us what the value is. Is that correct?

A. That's correct.

Q. But market quotes were not able to be obtained. Do you have any different understanding?

MR. TAMBE: Objection to the form of the question.

A. Market rates for what?

Q. For a replacement RFA contract.

A. Those contracts, according to

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what you have stated, and others -- there was not an active market for those sorts of contracts. But there was, certainly, a very active market for both legs of that contract.

Q. Well, that's not what this -- did you read this agreement?

A. I did.

Q. Okay. Does the agreement say you're supposed to get quotes for some different kind of contract, than the RFA?

A. Well, you can't get quotes for the RFA. You have to value it in pieces.

Q. That's not what it says here, does it? Does it say, "If you can't get quotes, then you value it in pieces"?

MR. TAMBE: Objection to the form of the question.

And just if you can, just let him finish answering.

A. If you keep reading, if you go to Section 7.6, it says that when you're doing such an operation, you have to do it from the perspective of the dealer, basically.

Because dealers are the ones that

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offer this. In fact, they said "Lehman's perspective." And that's the way the market values these things, and you do it in pieces. You do the best you can.

These instruments are valued all the time even though they're not traded. And they have to be valued, because they're reported mark to market on a daily basis. The CME requires that they use forward rates to value them.

The London Clearing House says you have to use forward rates to value them, and nothing that I've ever read says you have to use Hasterok's assumption.

And had Lehman assumed, or anyone assumed, what Hasterok does, they never would have entered into the deal. They would have said, "Okay. You're giving us $45 million, but it's only worth $15 million or $10 million. Because you're limiting us to only earn 65 basis points for the next 23 years."

Q. So is it correct then that your opinion is based on the assumption that the TSA loss has to be valued from the dealer side

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of the market?
MR. TAMBE: Objection to the form of the question.
A. It -- you use -- the way I read that -- and I'm not giving a legal opinion, just the way I read the contract -- is that you're supposed to use the typical conventions that dealers would use.
Q. So then is your opinion based on that assumption; that is, your opinions about the propriety, the use of the forward curve, et cetera, based on the assumption that you value this from the dealer side of the market using dealer-standard valuation methodologies?
A. That's a good question. I would value it the same whether I were the buyer or the dealer, because those are the only values that are traded. So it really doesn't matter.
Q. But if TSA can't transact, why do traded values matter to TSA?
MR. TAMBE: Objection to the form of the question.
You want him to speculate as to what matters to the TSA?

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A. The contract has ended. The question is -- in my view, the question is: Did TSA do the best that they could? Investing in money markets is, like, the worst thing you could do from my perspective. I don't know why they did that.
Were they trying to go for the lowest possible yield or have daily liquidity so they could gamble on the future and immediately transact when markets jump so they could make a big profit?
I don't know what their motivation was. I think they have pretty good -- well, I shouldn't speculate on that.
Q. Do you have any reason to believe that TSA was not acting in good faith?
MR. TAMBE: Objection to the form of the question.
A. I think I could have done a better job of mitigating losses than they did unless they were trying to make a play on the future.
Q. My question was whether or not you had any opinion on whether or not the TSA

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was acting in good faith?
A. No.
Q. In fact, it doesn't appear that you have reviewed any of the depositions of the TSA people who were making those decisions. Correct?
A. That's correct.
Q. Now, the actual RFA provides that if quotations are not available, that the burden party -- who is TSA. You understand that, that TSA is the burden party in this contract?
A. That's what I understand.
Q. (Reading.) "The termination amount shall be the amount as reasonably determined in good faith by the TSA to be the TSA's total losses and costs."
Do you remember that terminology?
A. Sure.
Q. And how does total losses and costs -- does that tell you you have to use future curves?
A. Could you give me the document, please?

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Q. Sure.
A. (Document review.) Section 5.5 talks about termination amounts. And it says the amount owed to Lehman could be substantial.
It also -- I remember reading something about material errors, that if the entity doing the valuation -- which in this case would be TSA -- made a -- I forget the exact wording, but it had to do with apparent or material --
Q. I think if you look at the end of the termination amount definition we were looking at the beginning of the contract, there's a manifest error. Is that what you're talking about?
A. Manifest error.
Q. It's in the termination amount definition that we were looking at originally.
A. Okay.
Q. At the end of that, on the next page.
A. I don't know what the definition of a "manifest error" is between economists.

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Curry and Hasterok made it to come up with a new method valuation, which I've never seen, they've never done. So there's clearly a manifest error from an economist's point of view.
Q. Oh, does the termination amount definition incorporate from an economist's point of view into its definition?
MR. TAMBE: Objection to the form of the question.
A. I'm an economist. It was manifest to me. What else can I say?
Q. The definition doesn't incorporate the standard of an economist finance professor at Wharton does it?
A. It does talk about from Lehman's point of view, from the perspective of Lehman in Section 7.6.
I would say that all the experts would agree that this is something that they've never seen before and never done before. And to make a claim for millions and millions of dollars from people who are not trained in economic things and who come up

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with a model that's ludicrous to valuate something, to me, that's a manifest error.
They should use standard valuation procedures that are consistent with the way things are actually valued.
Q. What's the standard procedure when you have a situation, as you've said, you've never seen before?
A. Uh-huh. You look at the pieces of the transaction and see if you can value them the best you can. Because the contract is no longer available, so there's potential damages that go to one party or the other. And you do the valuation and find out who they go to.
Q. Is there anything unfair or inappropriate in the definition of termination amount to try to figure out what TSA's actual losses will be?
MR. TAMBE: Objection to the form of the question.
A. What their actual losses will be? I don't know that there will be any losses at all under this contract.

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Q. I'm not suggesting you know. I'm just asking how do you determine what their total losses will be. As you said, there may not be losses. You have to go through the valuation first. How do you valuate what the total losses will be?
A. You look at what they could have lost in value. That's how I would do it. But I'm not the damages expert. I don't know the definition of damages.
They're talking here about a termination amount. I know something about valuing swaps, fixed pieces, and floating pieces.
My testimony is really restricted to methodology and how swaps are -- take advantage of or valued by forward rates of interest. So I wasn't asked to really do this, what you're asking me now.
Q. Okay. Fair enough. I do need that back though.
A. Sure. (Handing.)
Q. Have you ever been asked to give an opinion about a party's total losses?

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MR. TAMBE: Objection to the form of the question.
A. I don't know. I don't think so.
Q. Okay. When you use the term "historically low short-term interest rates," what interest rates are you referring to?
A. Interest rates during my time, since I started looking at it.
Q. What instrument? When you say "interest rates," it could be a money market funds, a T-Bill, a --
A. I'm sorry. Treasuries.
Q. Treasuries?
A. Yes.
Q. You say the 65 -- the .65 percent interest rate ignores historical record.
Do you see that?
A. Yes.
Q. It certainly reflects the historical record from March 2009 to February 2014. Correct?
MR. TAMBE: Objection to the form.
A. I'd have to look at the data.

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I'd say "no." What it did was reflect one interest rate that was available out of four years. That interest rate happened to be reasonably close to one available four years earlier, but the rate fluctuated quite a bit.
So I looked at that curve. It went way up and then way down. So I can't say that it's reflective of that four-year period.
Q. Nor can you say it's not reflective. Right?
A. I can say that I saw the interest rate jump way up and way down during that period and then jump up again. It depends on how you define "reflective."
Q. So which interest rate jumped up between March 2009 and 2014?
A. I saw a LIBOR plot. I went back to 2001 or 2002 and looked at a plot. And I already discussed that plot with you after one month, three month, six month LIBOR.
Q. I just want to make sure I understood your testimony. You were saying that going back to 2001, you see significant fluctuations up and down. Correct?

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A. Yes.
Q. But my question was: Since 2009, have you seen significant fluctuations up and down, if you know?
A. Since 2009?
Q. Yes.
A. I haven't looked at that.
Q. Is linear regression a common -- commonly used in finance?
A. A linear regression is commonly used in finance.
Q. You don't have any problem using linear -- sorry -- using linear regression is not unsupported by financial theory. Correct?
MR. TAMBE: Objection to the form of the question.
A. It doesn't make any sense to me.
Q. Other people use it in financial theory?
A. Financial theory does not speak to statistical methodology.
Q. So the forward curve is not -- does not have anything to do with financial theory?

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A. Forward curve has a lot to do with financial theory. Linear regression is one of many methods used to calculate forward curves and spot curves.
Q. So I understand, linear regression is a tool used in financial theory by some people to calculate the spot curve or forward curve. Correct?
A. The earliest models back in the '70s used that.
Q. And the forward curve is simply a more precise, from a modeling point of view, line drawing. Is that fair?
MR. TAMBE: Objection as to form of the question.
A. No, it's not fair.
Q. It is just drawing a line based on a computer model. Correct?
A. If you define a curve as a line, I guess it's a kind of a line, a non-straight line.
Q. In paragraph 4, you talk about the upward sloping of the term structure of interest rates. It's more historically

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prevalent at higher levels?
A. Yes.
Q. Does the -- I'm just going to use the word "forward curve," because it's easier for me to say. Is the forward curve always upward sloping?
A. No.
Q. So you're just talking about the upward slope that was present on March 25, 2009?
MR. TAMBE: Objection to the form of the question.
A. Well, the upward slope is persistent for a while here. It reflects market expectations as well as all other market information.
Q. Low interest rates have persisted for a while as well. Right?
A. They have.
MR. LAWRENCE: Why don't we take a break.
MR. TAMBE: Sure.
(Recess taken from 2:40 p.m. to 2:58 p.m.)

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BY MR. LAWRENCE:
Q. Given what you know about financial theory and the functioning of the markets, wouldn't you expect some dealer to be able to quote a replacement RFA contract in March 2009, just on a theoretical basis?
MR. TAMBE: Objection to the form of the question.
A. I would expect -- more than expect I would have an almost certainty that they would be able to quote swaps. Whether associated with an RFA or not, you'd have to ask someone that's closer to the markets, the day-to-day market, than I am.
Q. Well, your financial theory is that there's a standard market methodology for valuing contracts such as the RFA. Correct?
A. There is a standard methodology, yes.
Q. And this is not a secret. It's known to all of the market participants. Correct?
A. Apparently not, if TSA is saying that they use some other way of valuing it.

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Q. Well, they're not a dealer, but I'm asking from the dealer's point of view. This is a well-understood theory of using forward curves to value contracts such as this. Correct?
A. Yes.
Q. And it should have been a relatively straightforward exercise for a dealer to valuate this contract in 2009. Correct?
A. They had to do it daily.
Q. And thus it should have been relatively straightforward for a dealer to provide a quote to the TSA to provide some type of replacement contract?
MR. TAMBE: Objection to the form of the question.
A. I think that's a non sequitur.
Q. Why?
A. I could come up with a value, but that doesn't mean I'm going to quote. I may not be interested in that particular instrument. That doesn't mean I can't figure out what it's worth.

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Q. So you recognize there's a difference between your valuation methodology and what a dealer might be willing to transact?
MR. TAMBE: Objection to the form of the question.
A. Could you read back the question?
(Record read.)
A. A dealer will have their own valuation methodology, not necessarily my valuation methodology, but something that's consistent with it. And he may not be in the market to transact for that particular instrument, but they can still value it. We did that all the time at Goldman Sachs.
Q. Well, you've got a lot of market players who are capable of applying similar financial models to yours to value this contract, the transactions under this contract. Correct?
A. Yes.
Q. Okay. But none of them were willing to actually transact. Correct?
MR. TAMBE: Objection to the form

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of the question.
A. I don't know if some of them were. What I know is TSA didn't find anyone that was. I don't know how much canvassing they did. I know that Curry and Hasterok purported that there wasn't, even though their own firm was offering quotes, according to Mr. Hasterok, on such instruments.
Q. In 2009?
A. I think he said that the Lehman -- sorry, not the Lehman desk but Morgan Stanley desk. He mentioned it. Page 109, or something, he said something like that. I couldn't swear to that particular number. I have a lot of numbers in my head.
And not only them. Wachovia apparently made some sort of quote that they were apparently willing to transact at.
Q. I'm sorry. Is it your understanding that the Wachovia quote was a quote that they were willing to transact at?
A. I think so, but I don't know for sure. I'd have to go back and review the testimony.

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Q. Was it fact that you think Wachovia provided a quote that they were willing to transact something that supports, in your view, your opinions in this case?
A. No.
Q. Can you explain why -- if there are financial models that everyone uses in the market that are substantially similar, that can easily value this contract -- nobody was willing to transact an alternative contract?
MR. TAMBE: Objection to the form of the question.
A. I don't know that nobody was willing to. I just know that Mr. Shapiro apparently asked some people, but he didn't keep track of who he asked and what they said.
And Mr. Hasterok or Curry asked a couple of people. I'm assuming that the market was thin or dried up entirely. But that doesn't mean the cash flows associated with the original contract couldn't be mimicked and priced.
Q. Doesn't the fact that the market is unwilling to transact, provide some

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indication of the value of the contract?
MR. TAMBE: Objection to the form of the question.
A. Assuming the market was unwilling to transact, I presume there would be a price, some price that would induce someone to go into it. But to me, it doesn't indicate the value of the floating leg rate of a swap or a fixed leg rate of a swap.
Q. I thought -- sorry.
A. That's enough.
Q. Well, it's correct that you would assume that somebody would be willing to transact at some price, because that's consistent with your financial theory, correct, about how markets operate?
A. Yeah. And you'd think at some price you could attract someone. I don't know what that price would be. But it's not particularly relevant.
Because what you're looking for is what the value of the two legs happen to be on the day of the termination, or rejection, I should say.

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Q. The forward curve, as we've talked about, is based on data from market transactions. Why isn't the inability or the lack of a transaction a relevant piece of data that should be considered?
A. Because there were thousands of transactions on the same LIBOR curve during any given day.
Q. But there hasn't been a transaction in an RFA since 2009. Why isn't that data relevant?
A. You can get the same amount of dollars on some other kind of instrument. The fixed rate back in 2009 was about 5-something percent. They were being offered 4.484.
It's just that TSA, because of their indenture, wasn't able to take advantage of that. So that means they would have to do the floating rate leg, which is worth the same amount of money, if you're trying to figure out how much money was lost and what it's worth.
Q. I'm just trying to understand why it is that you take into account certain

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market data but then refuse to take into account other market data?
MR. TAMBE: Objection to the form of the question.
A. I'm looking at the present value of a cash flow strain. We already talked about the fixed rate leg and we talked about the floating rate leg. The present values can be determined, and you can get pretty accurate valuations on those.
Whether TSA had restricted itself through an indenture or something to take advantage of certain legs of the transaction, they nonetheless had all the money. And the transactions had the same -- the legs have the same value whether TSA can take advantage of one leg or the other.
Q. Did you take into account the mandatory cleanup call provision of the RFA?
A. Yes, I read it. It means there's a potential cancellation TSA could do. I looked at whether there was optionality involved. There isn't in the financial sense, but there is in a legal sense, I suppose.

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The financial sense optionality means you can willfully do something just because you find an advantage to doing so. And instead, this was precipitated by something outside their control.
Q. Are you aware of any swap transactions where an event -- I don't know if that's a word you feel comfortable -- but an event can trigger a par call?
A. Sure, cancellable-type swaps. And in this particular case, it must have been embedded in the original agreement that pricing would have reflected the fact that TSA had this cancellation provision that might be invoked.
Q. So a callable swap might have been an appropriate alternative investment vehicle for TSA?
MR. TAMBE: Objection to the form of the question.
A. I talked about cancellable swaps.
Q. Maybe I'm misunderstanding the distinction between callable and cancellable.
A. Yeah. Cancellable was outside of

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the volition of the TSA, as I understand it. And so it doesn't invoke the option pricing. Instead, it invokes actuarial type pricing where you look at probabilities.
It's sort of like mortgage backed -- well, no. Mortgage-backed securities actually -- some of the mortgage-backed securities have options in them where people will cancel them en masse because of an interest rate change.
But these are, sort of, outside the control of TSA. So you just put expectations on it and you price it.
Q. You didn't calculate the pricing of what a cancellable swap would be in March 2009. Right?
A. No.
Q. Or what it would have earned in terms of a floating rate?
A. No.
Q. If you turn to page 6 of your report. At the bottom of page 6, you analogize the forward rate to the algebraic equation, 5 plus "X" equals 8. Correct?

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A. I analogize the facility with which you can calculate forward rates as that equation, 5 plus "X" equals 8.
Q. Well, just so we understand: 5 plus 3 equals 8 today, tomorrow, the next day. It always equals 8. Correct?
A. Yes.
Q. But as you've indicated, the forward curve on March 25 is going to give a different algebraic equation than a forward curve is on December 24 or 25. Well, the 25th is a holiday. You probably don't have too many transactions on it. Correct?
A. Correct.
Q. So the notion that X is not speculative and is reliable and ambiguous, only pertains to the one day for which the forward curve is calculated. Fair?
MR. TAMBE: Objection to the form of that question.
A. I wouldn't state it that way. I would just state that X is the solution to the equation, and it's always that solution to that equation. Every day there's another

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equation, and you can solve for the new X.
Q. But you can't, you can't use the equation -- unlike 5 plus X equals 8, which is always true, you can't use the equation to determine actual interest rates one or two years from now, or three or four years from now. Correct?
A. I wouldn't use 5 plus X equals 8 to determine interest rates. I'm not sure what you mean.
Q. You can't use the forward curve to determine interest rates five, ten, fifteen, twenty years out. Correct?
A. You can use forward rates how you want to. Some people might use it for that purpose.
Q. But that would be speculating.
A. Well, it could be reasoned through various other principals. The forward rates reflect the best information the market has, not only on future interest rates, but on credit risk and on liquidity and everything else the market puts into that calculation of a forward rate.

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So some people try to extract the other information and find out the pure, implicit forecast that might be in the forward rate. And other people say that you don't accept those assumptions.
Q. What about you?
A. I've looked at forward rates, and I've looked at all sorts of ways of forecasting future interest rates. I've read the literature. I must have read a -- I'm just guessing -- 40 or 50 papers on it.
Q. Do you --
MR. TAMBE: You want to let him finish his answer.
MR. LAWRENCE: I thought he was finished.
A. There's a mixed response. Some people have better success with them than others, depending on what else they put in their model to filter out the other factors.
Q. Do you believe that's an accurate way to forecast interest rates five years out?
MR. TAMBE: Objection to the form of the question.

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You can answer.
A. Well, earlier on in the deposition, we talked about "reliable." I said, "What's reliable? One basis point out of 100?" And I think I said 6.4 or 6.42 or something like that. And you said, "Let's start with that."
I have the same problem with the question you just gave. Do you think that forward rates give an accurate prediction of future spot rates of interest? I don't know.
If you had asked the question: "Are they better than other forecasting techniques?" They're better than a lot of forecasting techniques. I've read a lot of papers showing that. But a forward rate can only reflect the information we have available today, and tomorrow is another day.
I would say the same thing about the stock market. You can't predict the dividends and the earnings of companies in the future very well. Neither can I. And yet the market has a price that it's worth today. And we have to transact at that price. We don't

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get the choice.
Well, we get the choice not to buy or not to sell, but we don't get to pick our own value. Because no one is going to do that. They use the market value.
Q. TSA would have liked any value, but they couldn't get any from a market quote?
MR. TAMBE: Objection to the form of the question.
MR. LAWRENCE: Strike that.
Q. On the next page, you state -- this is in the bottom paragraph there -- "In particular, note that the near-term rates for March 2009 are very low, and then from that point the interest rate rises quite steadily."
Do you see that?
A. Where is that?
Q. Bottom of page 7.
A. Yes, they are very low. That's right.
Q. Is it fair that near-term rates are typically very low compared to other rates?
A. No. We already talked about the

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term structure, and it's typical that maybe 70 percent of the time -- I've seen some studies, some historical studies. About 70 percent of the time, the near-term rate is lower than the rate two years later or three years later. But I've seen also near-term rate at 18 to 21 percent and the long-term at 12.
Q. I assume you would acknowledge that was in another anomalous period in the late '70s. Correct?
A. It was certainly a period of a lot of volatility and uncertainty.
Q. Can you turn to page 9.
A. Yes.
Q. The second full paragraph includes, "I conclude that Messrs. Curry and Hasterok's calculation of the termination amount will certainly yield TSA substantially more than the TSA contracted for with LBSF and RFA."
Do you see that?
A. Yes.
Q. I need your help in understanding that. How will the termination amount yield

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substantially more than what TSA contracted for?
A. Let me look at the full paragraph. Just a second.
Q. Sure.
A. (Document review.) Well, yes, they did three things in their calculation, all of which inflate the value to TSA of the contract.
Q. And I understand your opinion on that. I'm just trying to specifically understand this sentence.
What is the yield that TSA contracted for? Maybe that's what I'm trying to figure out. I mean, TSA contracted for a guaranteed rate of 4.484 percent.
A. Okay. I see. Maybe the choice of my word "yield" is signifying to you something to you other than I intended. I could have used the word "give," "provide," "earn," something else. I don't mean an interest rate. I mean a return.
Q. So again, I'm trying to understand, TSA contracted to get 4.484

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percent from Lehman Brothers. Correct?
A. That's right. And also to give them a floating rate opportunity to invest 45 million for some 20-plus years.
Q. Right. But I'm saying, from TSA's point of view, they gave over $45 million every six months, and they got back 4.484 percent?
A. Plus 45 million.
Q. Plus 45 million, exactly.
So how does Curry and Hasterok's calculation yield or earn more than that?
A. Curry and Hasterok were taking some historical average rate over four months, or something like that, and assuming it goes on forever. And instead of -- that's one problem.
The second problem is that they discounted it, not by the rate the whole market uses, but they discounted it by that similar rate. They set their cash flows based upon that same rate prevailing.
Well, that same rate hasn't prevailed maybe one or two days out of the

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last four years, .65, it's always changing each day. They assumed it for the next 23 years. There's never been a period in our history like that.
If you ask any economist or just ask the market: What are you predicting, or what are you thinking about the future? They're saying we face some very rough water ahead because of the monetary policy that we've undertaken as well as our fiscal policy.
So inflation is down the road. We just don't know when it's going to hit. But when it does, interest rates reflect the inflation rate.
Q. Let me ask it a different way.
Do you have an opinion as to what earnings TSA contracted for with Lehman Brothers in the RFA?
A. I have an understanding that TSA contracted for 4.484 percent.
Q. And how is Curry and Hasterok's calculation of the termination amount going to yield more than what TSA contracted for?
A. We don't know what it's going to

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yield. We only know one thing -- and I'd stake my reputation on this -- that it's not going to be -- that the markets are not going to provide 0.65 percent from now for the next 23 years. There's zero percent chance of that happening.
Q. And would you agree there's a zero percent chance of the market providing the yields reflected in the forward curve as of March 25, 2009, over the next 23 years?
A. I would agree that the market will provide more or less than the forward curve. Some years more; some years less.
Q. If I bought a ten-year treasury on March 25, 2009, and my partner buys six-month treasury bills -- buys six-month treasury bills every six months for ten years, do you believe that they're going to end up in the same place in terms of the amount of money they've earned over that ten-year period?
A. I don't know.
Q. You can't tell based on the forward curve. Correct?
A. No.

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Q. Is that correct?
A. That's correct.
Q. If you turn to page 12, you have two -- you have a chart on page 12 and a chart on page 13 showing curves. What is the point of those two charts?
A. Two points: First, that the term structures -- the spot rates are extremely important in valuing things, so important that the treasury goes through the trouble of calculating every single day of the year. Not only the treasury, but now we have all these other private corporations that are trying to get a more refined calculation.
Secondly, that the treasury calculates the forward rates every day for every year since 1960, not just the U.S. Treasury, but every other place. Like Goldman Sachs, like Lehman Brothers, like Merrill Lynch, like just about every other trading house, calculates these forward curves and spot curbs every day; in fact, every minute of the day because they're important in valuing instruments.

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And I just want to show you some evidence of that. Because it sounded like from the report -- until I heard the depositions from the report of Curry and Hasterok, it sounded like they were eschewing the use of forward and spot rates when they're primary tools in the valuation in the marketplace. Now, their depositions said that they agreed, then they always used them themselves.
Q. The disagreement is whether or not forward curves are a usable tool for a contract that is not being transacted. And I know you think it's okay, and they think it's not.
A. Uh-huh.
Q. Is there any publication that you can point to that gives us guidance as to how we should value when there's no market to transact in a certain asset?
A. Sure. The Accounting Standards Board has produced a hierarchy for use in valuation and reporting. And what they say is: If you cannot find active trades, quotes,

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then you can use -- the second tier would be to mark the model. Then the model needs to be consistent with things that are accurately traded, which tell you the value of money at different points in time for future delivery.
Q. So you're talking about the FAS 150?
A. I think it's 150.
Q. What's owed by Level III assets?
A. What about them?
Q. How do you value those?
MR. TAMBE: Objection to the form of the question.
A. I don't remember. I remember reading it.
Q. Do you know whether or not banks consider Tobacco RFA's to be Level III assets or Level II assets?
A. I don't know.
Q. And you don't have an opinion as to whether it's a Level II asset or Level III asset. Is that correct?
A. That's correct.
Q. Okay. If you turn to page 14.

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A. (Complying.)
Q. You have a Table 1. Do you see that?
A. Yes.
Q. And these are published by the Fed Reserve Board?
A. Yes, economists that were contracted by them and one of them who works with them.
Q. And what does that tell us about -- just so I can understand the table -- it says, "Year 1, spot rates of interest, .66 percent. Forward rates of interest .92 percent."
What is that telling me?
A. Yes. From time 0 to time 1, the amount of yield you can get for a one-year instrument is .66 percent. And the forward rate of interest for time 1 to time 2 is 0.92 percent. So that's one year looking forward.
Q. I'm sorry. Is that -- I just want to make sure I understand. Are you saying that the -- that the .92 percent interest is what you need to earn in the

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second year to get to the .95 percent spot rate?
A. Good question. I need to check that.
I looked at it, and I can't remember right now.
Q. But if I were buying a one-year treasury on March 25, 2009, I'd be able to get .66 percent interest for that one-year treasure. Correct?
A. Yes. That's their spot rate. And that's based on treasury bonds and not the bills.
Q. Sorry.
A. The treasury also uses a slight smoothing routine that isn't used by all the market -- by some market participants. So you get a smoother curve when the treasury does it. That's just their preference.
Q. Are you familiar with ISDA?
A. I know of it, yes.
Q. What is ISDA?
A. It's a protocol for swaps and derivatives, and that's the S and the D.

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Q. You're right. Do you understand how it's used in the industry?
A. Well, they have, sort of --
MR. TAMBE: Objection to the form of the question. "How" -- what's -- "used in the industry"?
MR. LAWRENCE: The ISDA master contract and schedule are used in the industry.
A. So that's -- now you took away my answer. That's what I was going to say. They have a master, sort of, a standard form agreement that can be modified. But that's the standard, a starting place.
Q. Was the TSA RFA subject to the ISDA master schedule?
A. Don't know.
Q. Is the TSA RFA a derivative transaction?
MR. TAMBE: Objection to the form of the question.
A. How are you defining a derivative?
Q. How would you define a

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derivative?
A. I would define a derivative as something whose value depends upon the value of something else.
Q. Based on that definition, do you consider the TSA RFA to be a derivative transact?
A. I don't opine on that. What I opine on is that it could be valued using methods that are appropriate for derivatives and nonderivatives.
Q. Isn't the RFA securities transaction what a dealer would typically hedge using derivative transactions?
MR. TAMBE: Objection to the form of the question.
A. I don't know whether a dealer would typically hedge it. I know that dealers can hedge it, at least to some extent.
Q. Well, with your experience in the marketplace, you don't know whether or not dealers would typically hedge an RFA transaction?
A. I know what Goldman would do, and

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I have an understanding of what most dealers do. They try to lock in a profit and hedge out the rest and move on.
Q. Do you know what Lehman did in this case?
A. No.
Q. So on page 19, you identify four, I guess, economic theories -- sorry, 15. On page 15, you talk about four theories, regard that one might use to look at future levels of interest rates. Is that correct?
A. Yes.
Q. And would you agree that all four of those theories would have predicted different interest rates for the period 2009 to 2014 than in actuality occurred?
A. I don't know. I haven't -- the theories are -- they're not that simple that I could respond without doing some calculations.
Q. On page 16, in the middle of the paragraph on that page, you say Messrs. Curry and Hasterok have simply ignored the fact that to make forward commitments, the providing institution, LBSF, will have to incur the

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market costs of doing so. And those market costs are reflected in the term structure of interest rates."
Do you see that?
A. Yes, yes.
Q. Can you help me -- explain that sentence to me.
A. Yes. Mr. Curry and Hasterok have -- let me start over again.
Lehman Brothers and LBSF are going to be making commitments, putting Lehman on the line for a number of years in the future.
And if they're going to be providing payments to TSA, they have to figure out how to get those payments and the appropriate amounts to TSA.
A typical dealer will not just go naked on it. They will hedge it, and they will find market instruments that provide those sorts of cash flows.
Q. When you say "market costs," you're talking about of obtaining hedges?
A. Yes.

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Q. Now, you reviewed the valuation matrix that was prepared by Messrs. Curry and Hasterok?
A. I read about it.
Q. One of the items on the matrix was a callable swap, and it had a yield associated with that.
Do you recall that?
A. I recall that.
Q. Did you do any research to determine whether or not they used the correct yield for that type of instrument?
A. No.
Q. Did you do any research to determine whether or not the yields identified in the valuation matrix were accurate or not?
A. No. That was not my task.
Q. And I take it you were not asked to review the calculation of SWAP Financials. Is that correct?
A. That's right. Let me say, your question was not asked to review the calculation. So that's correct. I did not review the calculation. I did look at the

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methodology, but I didn't verify anything, replicate anything. I was not asked to do any valuations.
Q. You were not asked to provide any opinion, at least as far as I see in your report, about swaps?
A. About swaps?
Q. About the SWAP Financial calculation?
A. That's correct.
MR. LAWRENCE: Why don't we take five minutes and see if we're about done.
MR. TAMBE: Okay.
(Recess taken from 3:43 p.m. to 3:53 p.m.)
(Continued on the next page.)

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BY MR. LAWRENCE:
Q. Under your contract with Jones Day, I understand there's a cap on fees of $75,000. My question is: What fees have been incurred to date?
A. $75,000.
MR. LAWRENCE: That's it. Thank you.
(Time noted: 3:53 p.m.)

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A C K N O W L E D G M E N T

STATE OF)
: ss
COUNTY OF)

I, DAVID F. BABBEL hereby certify that I have read the transcript of my testimony taken under oath in my deposition of March 7, 2014; that the transcript is a true, complete and correct record of my testimony, and that the answers on the record as given by me are true and correct.

____
DAVID F. BABBEL

Signed and subscribed to
before me this ________
day of _____________, 2014.
____
Notary Public

D. Babbel

C E R T I F I C A T E

STATE OF NEW YORK)
: ss.
COUNTY OF NASSAU)

I, PATRICIA A. BIDONDE, a Notary Public within and for the State of New York, do hereby certify:

That DAVID F. BABBEL, the witness whose deposition is hereinbefore set forth, was duly sworn by me and that such deposition is a true record of the testimony given by the witness.

I further certify that I am not related to any of the parties to this action by blood or marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this day, March 17, 2014.

____
PATRICIA A. BIDONDE, RPR

D. Babbel

I N D E X

E X H I B I T S

D. Babbel

ERRATA SHEET FOR THE TRANSCRIPT OF:
Case Name: In Re: Lehman BROTHERS HOLDINGS.
Dep Date: March 7, 2014
Deponent: DAVID F. BABBEL

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Signature of Deponent

Signed and subscribed to before me
this ____ day of _________, 2014
____
Notary Public